#### The only real alternative Plessey

**Peripheral** Systems

Harrowden Road, Brackmills, Northants NN4 OBE. hone: 0604 65151 Telex: 312254

#### **NEWS IN BRIEF**

#### **Danes win** Nato order

THE Danish electronics firm, Christian Roysing, has won an order worth more than £12 millkm from Nato to equip Camps, the Computer Assisted Message Processing System. The order. which is the biggest computer export contract ever won by a Danish company, includes at least 12 Christian Roysing CR 80 computers. Deliveries will start in the middle of next year.

Camps will enable telegrams to be transmitted between Nato member countries under high

#### NCR installation

NCR is installing shared-logic word processing and electronic mail in its two London offices with the purchase of a Unicom system for each building from Logica. Communications links are planned not only between the two Unicoms but also with an NCR 8585MP mainframe which holds a customer datu-

#### Union merger

MEMBERS of the 3,000-strong United Kingdom Association of Professional Engineers have voted to merge with the Electrical and Engineering Staffs Association, a section of Frank Chapple's Electrical, Electronic, l'elecommunications and Plum-

#### £1m Spanish order

THE Spanish associate company of ITT, Standard Electrica, has given ICL its biggest order yet in Spain. Worth £1.2 million, it is for eight ICL System Ten 220s, 107 9801 factory data collection terminals and 33 9805 time velopment of a 266K CCD.

A Storage Technology spokesman said his company recording terminals.

**GIVES 16** 

REPORTS

**ON YOUR** 

**LIBRARIES** 

Which programs update

Which production programs

When I change a suprogram what

DOS, DOS/VS(E) users contact us for details.

Westifighouse Management Systems S.A.

1 High Street, Edgware, Middx HA8 7DF

vere changed last week?

Tel: 01 951-1615

# NASA wants '40 times faster' supercomputer

A SUPERCOMPUTER with a performance each word being 64 bits. of 1,000 million floating point operations per second, about 40 times greater than any existing supercomputer, could be a reality

NASA in the US wants such a system for wind tunnel simulation at its Ames Research Centre at Palo Alto, California, and Control Data and Burroughs have carried out, studies into the possible architecture of the

Control Data's study suggested the use of a single-processor machine with three levels of memory. There would be a main memory with an access time of 40 nanoseconds, a bandwidth of 256,000 million bits per second and a capacity of up to eight megawords,

An intermediate memory would have a 120-nanosecond access time, a 21,000million-bits-per-second bandwidth and a apacity of up to 32 megawords. The third

level would consist of back-up storage with a 2,000-million-bps bandwidth and up to 128 megawords of capacity.
Burroughs outlined a supercomputer with 512 independently operating conventional Fortran-oriented processors, Each would be able to execute 3.5 million floating point operations per second (flops) and would

have its own 32,684 words of memory. In addition, all the processors would share a main memory with a capacity of about 34 megawords. The Burroughs machine would

also have a supporting processor to run the operating system.

Both companies would use emitter coupled logic in their central processors. Another supercomputer manufacturer,

Cray Research, is understood to be interested only in offering an existing machine rather than putting a great deal of money into developing a new computer especially for NASA.

But Control Data believes that the technology developed for the NASA supercomputer could be applied commercially

NASA is expected to ask for proposals on the machine within the next three months and hopes to be able to have it installed and POLICY councils have he running by the mid-1980s.

# RAM to replace rotating memory

replacement of rotating memory by intermediate storage based on solid-state random access memory chips has been made by Intel, which is to start deliveries in the next six months of a memory system based on 16K RAMs with a capacity of up to 72

Called Fast 3805, it will be offered as a direct alternative to the IBM 2305 fixed-head disc drive and is expected to improve the overall performance of an IBM system by up to 30%.

Storage Technology already has a solid-state alternative to the 2305 called the 4305 which employs 64K charge coupled devices, but the company has decided to go over to using 16K RAMs in the 4305 because of the serious worldwide shortage of

charge coupled devices.
Fairchild is the only volume source now of CCDs and a Fairchild spokesman admitted that all its customers were on allocation. He added that Fairchild planned to expand its production of 64K devices and was also continuing with its development of a 256K CCD.

was extremely frustrated by the

A MAJOR step towards the CCD shortage because it had not anticipate that RAMs would back orders worldwide for 450

> He pointed out that his firm still hoped to build some 4305s based on CCDs if and when it could get the devices.

Storage Technology has decided to charge the same for RAM-based 4305s as for CCD-based systems. The RAM-based systems will also be functionally identical to CCD-based 4305s compatible with the IBM 2305

Storage Technology originally opted for CCDs instead of RAMs partly because it did

become so cheap. Last year New York stock analysts Morgan Stanley said in a newsletter that RAMs had a much more hopeful future in 4305-type systems than

The Fast 3805 (fast access semiconductor technique) is to be sold in the US by Intel salesmen but Intel could not say how it would be sold in Europe.

Intel says that Fast will cost which, in turn, are software- up to 15% more than the equivalent capacity of fixed head disc storage but offers an access time of less than one millisecond compared with five milliseconds

# 200 more on Threshold

THE National Computing Centre's Threshold training scheme has been increased by 200 has been increased by 200 places through a redistribution of the Manpower Services Commission's funds. The NCC is also being assigned an additional 100 places on the initial programming course which trains people already in non

trains people already in non-computer jobs.
Employers who send their staff on the programming course are eligible for a grant of £1,800, which pays for the course and part of the traineo's salary. Hitherto this grant has been available only through in-dustry training boards, but now firms in sectors not covered by an ITB can get the grant through an ITB can get the grant through the NCC. A grant of £800 applies to the 10-week systems

analysis course. The new total of 1,200

# Data entry for all IBM systems

or dual-display station, or as a

stand-alone unit. There are also

single and dual desk-top data

stations, and all units support

either integral or separate

floppy disc units.

Memory in the intelligent displays is either 32 or 64K-bytes.

while the free-standing control-ler offers 32K to 160K-bytes.

A Data Entry RPG enables

users to write their own pro-

grams, provides access to the

editing and processing functions of the 5280 and enables users to build up local files. It compiles

The new 5225 matrix line

printer runs at up to 560 lpm; the

on the 5280 controller.

A DATA entry system with local processing capability designed or remote communication with all the company's current computer lines has been introduced by IBM's General Systems Divi-

Called the 5280 Distributed Data System, it comprises a range of data entry display stations and is driven by a multiple microprocessor controller which provides bisynchronous and SNA/SDLC communication

Announced with it is a wire matrix line printer with a condensed print feature enabling computer output reports to be printed on A4 paper rather than standard full-width computer

andard full-width computer ationery.

The programmable controller condensed print feature gives a selectable 10 or 15 characters per inch and a six- or eight-lines-

# ICL committed to big systems

From Page 1 version of the 2950 is due to be announced, while the still mannounced S3, thought to be a microprogrammed machine to fit between the 2960/10 and the 2972, is likely to appear before

the end of the year. ICL is now discussing a number of possible development programmes with the Depart-

About 18 months earlier, an wants substantial backing, £6 to £7 million, for the development of a 128 by 128 array version of the Distributed Array Processor.

> ICL believes its future plans must include marketing of a full range in the US and that only with unique products like the DAP can it make enough headway in the US.

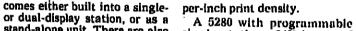


fold March for Bolts

IMMEDIATE AVAILABILITY

370/148 KOO ISC, IPA, etc. English language and voltage

Please call Steve Mason for rental and flexlease terms



single station, 64K bytes of memory, two 1.2-niegabyte floppy drives, 80-chps 5256 printer and communications adaptor costs £10,266 or £321.40 a month and delivery starts in July.

> O.P.M. **LEASING SERVICES** INC.

The Custom Leasing People

D **M** 

Short and Long Term Lease Plans Available

Corporate Honoquesters: O.P.M. LEASING SERVICES INC. 71 BROADWAY NEW YORK 10008 (212) 747 0220 (800) 231 2674



Printed in Great Britain by O.B. Limited Sheepen for the eater. CO3 BLJ, and published by IPC Electrical Level Lid., Doract Munic. Stamford Street, London, BF 1849.



STATIONE

COMPETITIVE MICES

QUICK DELIVERY

NATIONAL WORKS

industria

aemocrac

proposed by Post Offichairman Sir William Barker

the vehicle for industrial dec

cracy after the split belween

businesses, instead of Mil

The managements of the

Office and the planned at

British Telecommunicum

Corporation would

represented on the county) the chairman, managing (x)

tor, finance director migh

sonnel director of each bear

Sir William said he hope to

unions would be represent

The councils would be

access to policy documents

to full accounting infomes.

They would discuss policy

But the unions are state

ing out for full board mex

In management's viert

worker directors came free:

for down the union structus

be able to present accurate

overall response of their wa

System Ten most

ICL's US subsidiary hat

duced a top-end machinest

company's System Tengt

business system range 12

third model in the range of between \$35,000 and \$100,000.

the same time the US openion

has been split into the R tions: distributive system N

vanced systems and column

INTERNATIONAL PRESENT

O.P.M. LEASING SERVICE (EUROPA) INC.

O.P.M. LEASING SERVESS

O.P.M. LEASING SERVICE (FRANCE) SA

O.P.M. LEASING BEAVER. (DEUTSCHLAND)

and performance.

their general secretaries.

postal and telecommun

worker directors.

Number 690

Presper Eckert of Eniac, claimed as the

world's first all-electronic digital computer,

Dr Mauchly went to Johns Hopkins University, Maryland, on a scholarship and

graduated in 1932 with a PhD in physics. He

became head of the Physics Department at

Ursinus College, Pennsylvania, and while

there his work on weather analysis showed

the need for a high speed computer. To solve

this problem he bought his own electronic

equipment and started experimenting. In 1941 he left Ursinus for Pennsylvania

University where he met Presper Eckert and

they submitted a proposal in 1942 for an

electronic computer. The US Army placed a

agreements with ICL and Siemens.

stake in Compagnie des

Machines Bull, majority shareholder in CII-Honeywell

Bull, does not signal any disen-

gagement from the computer

died earlier this month, aged 72.

Thursday, January 24, 1980

Price 20p

#### Data reparation

We have the capacity to punct your peak loads, file set-ups or regular work on 80 column cards. Croydon: Nada Waugh, Telephone: 01-688 6047

Peter Merrick Associates Ltd

# **Briefing**

Pier in Balle

# Joint project on robots

THE development of sensory and mechanical systems for robots is to be studied by the Industrial Innovation Centre as part of a £60,000 joint government/private industry

Work being carried out in the US and Japan will come under sp cial scrutiny as the main aim of the project is to advance the nent of robotic systems in the UK by learning from overseas research.

#### Bid for Decca

TALKS which could lead to a Racal takeover of Decca are under way and a formal bid could come this week. Now that Decca has arranged the sale of its record business to PolyGram. Racal is keen to acquire all the company's businesses apart from television set manufacture. See City Comment, page 16.

#### Univao fire

ALTHOUGH a fire in branch ides administration at Univac's UK headquarters at Stone-bridge Park, London, last Sun-day put the telephone exchange out of operation, a company okesman said that no serious damage was done and it was business almost as usual from Monday onwards,

## No sale at BOC

REPORTS that the BOC group is planning to sell off the BOC Datasolve bureau and computer services operation have been denied by the action have denied by the company. A reexamination of all the group's activities is continuing but hairman Sir Leslie Smith says so conclusions have yet been

# <sup>.'370'</sup> for \$20,000?

US SOURCES say that Intel is working on a microprocessor which includes the IBM 370 in-Attuction set. If the project came Panles to offer a desk top com-puler running IBM 370 software with 128K-bytes of main Amory and 20 megabytes of

# angem rivat

AE success of Tandem's multiocessor non-stop minicomters has encouraged DEC to le a development project to logether a similar system. n designed its hardware 48 mode, US sources say.

#### levelopment and further The company says that its interests in peripherals, small CGE sold its 20% stake in systems, communications, soft-Machines Bull to French industware and bureau services and rial conglomerate St-Gobainoffice automation will continue Pont-à-Mousson because it did to be a major growth and innot see eye to eye with the other najor shareholder in Machines Bull, the French government, Union fights phone

CGE pledges continued

THE big French electrical group vestment area within the com-

CGE has emphasised to pany's portfolio of interests. shareholders that the sale of its

interest in computers

A POST Office plan to introduce a back-up telephone billing sys-tem which would enable estimated bills to be sent out to customers during strikes has met union resistance.

Dills scheme

The Society of Civil and Public Servants, which represents computer grades in the Post Office, is concerned that the plan was announced without a multiprocessing refuling system, but DEC is wing to rewrite much of its whare to run in multiprocessing work required to create the back-up capability.

Talks between the Post Office and SCPS are under way.

# elling DP to solicitors

ducational and co-ordinating body to promote the development dust of legal information retrieval systems in the UK has been set the auspices of the Law Society and the Society for the auspices of the Law Society and the Society for the auspices and Law Called the Law Society and the Society for nters and Law. Called the National Law Library, the group will perate online commercial operate online services itself but will encourage commercial

eldes for the library came out of a report published last year by Society for Computers and Law (CW, February 15, 1979). An 1000 from the Law Society

# Co-inventor of first digital computer dies, 72 problems. This was Eniac — Electronic Numerical Integrator and Computer — and it

was completed in 1946. Mauchly and Eckert left the university in 1947 to set up their own company, Eckert-Mauchly Computer Corp, where they developed Binac - Binary Automatic Computer — claimed as the first computer programmed by internally stored instructions. From this machine Univac I was derived and the first

garded as the kind of man

who would confine himself to

interests in computers apart from its CMB holding, but has

great ambitions. It wants to

grow its computer interests to £1,000 million a year by 1985

(CW, November 29, 1979) and is

expected to increase its stake in

CMB by acquiring other companies in office automation said

other computer-related ficids on

An indication that the French

government approves St-Gobain's plans for CII-HB is that

Fauroux was received by Pre-

Elysée Palace last week to

as ICL but is only growing at just over half the rate of the UK

company. The French Industry Ministry is believed to see two

ways for it to expand: by

acquisition and by moving into

new territories such as UK and

A Honeywell spokesman at

Computerview on Trying to control IBM

Turn to Page 3

ALSO . . .

Letters to the Editor

Users warn IBM Downtime by Chad Michie's Privateview

Focus on a necessary evil DEC diagnostics centre Page Six for programmers Puzzler Boftware Elle

Operation of the Control of the Cont

INSIDE THIS WEEK'S CW....

ident Giscard d'Estaing at the

CII-HB is about the same size

Unlike CGE, St Gobain has no

such a role.

hehalf of CII-HB.

outline his proposals.

Mauchly's main interest was the application of computers and he was founder and a president of the Association of Computing

CII-HB drive to

ead in Europe

PLANS are being laid in France which could holding in Compagnie des Machines Bull is

lead to CII-Honeywell Bull acquiring a con-

trolling interest in Honeywell's UK and Ita- behind CII-HB. CMB is the holding company

lian subsidiaries. The move would facilitate for the 53% French stake in CII-HB and the

CII-HB's hopes of securing collaborative managing director of St Gobain, Roger Fau-

The purchase by the St-Gobain-Pont-a- Tebruary. The holder of this poss has hitherto

Mousson industrial group of CGE's 20% been a figurehead, but Fauroux is not re-

of the company's business had

averaged an annual 30% over the

past five years, and the company

would seek to continue this

growth rate both from internal

over the next phase of CII-HB's development (CWI, October 11,

CGE has not stated its objec-

thought to have objected to Italy.

tions but the company is

CII-HB's invasion of markets

in which CGE has interests,

PERSONAL GAME

first winners

like office systems and banking

The potential of the personal

computer market is only just being realised. Some of these systems can be seen in operation at Microsystems 80 at Wembley, and in a special section some

aspects of the personal computer market and the equipment that is being developed are reviewed

Pages 17/18

The solution of Computer Week

ly a first Prize Crossword is People and Svents

published this week with the Micro News
hames of the winners. The next Company News
crossword will be published on Sales Sit

Peopleary 7

Page 65 Rising costs kill Chaps

JOB VACANCIES: PAGES 19-56

was installed for the US Bureau of Census in

The Eckert-Mauchly Corp was bought by Remington Rand in 1950 and for the next 10 years Dr Mauchly was director of Univac's applications Research.

He left in 1959 to set up Mauchly Associates to carry on consultancy work and he ex-tended these activities in 1967 with the establishment of a second consultancy, Dyn-● In the UK, Colossus, the Bletchley Park

code breaking computer, which was built by a Post Office team led by Tommy Flowers, at Dollis Hill, London, went into operation in December, 1943. The specification for this machine was devised by Professor Max Newman, but it was Flowers who decided to use thermionic valves in its construction.

BIGGEST

UK MICRO



# leasing deal

SHOW puters at Microsystems 80, the biggest specialist micro exibi-tion and conference so far hold in the UK. It is at the Wembley Conference Centre front January 30 to February 1. And the exhibition is free, so mark

the dates in your diary.

Some 70 exhibitors will demonstrate their products and services on 100 stands.

The conference runs over the three days and includes sessions on developments in micro technology; putting micros to work; systems design and specification

For the manager, engineer or software specialist who is looking for an introduction to various aspects of micro techiology there are also three one day courses: How to get started MICTODIOCESSORS Microprocessors

Microcomputers — a hands-on workshop for engineers; and Pascal: the language of micro-

LLOYD'S of London will be in the computer leasing business in the US if an agreement with the ailing Itel is concluded. Lloyd's will take over Itel's lease

undisclosed sum of cash and assets from Itel. The deal will relieve Itel of having to find new lessors for the 370s and of having to make any more claims on Lloyd's underwriters under policies covering the residual values of the 370s when their original

base of IBM 370s in return for an

leases are terminuted. The claims could have amounted to \$200 million over the next two years. Lloyd's will

assume responsibility for those debts under the agreement. An Itel spokeswoman in San Francisco said that final agreement should be made by the end of February but the \$100 million

suggested by some reports as the payment to Lloyd's was

# New from Cifer... ...the 2600 range

range of Visual Display Units. This comprehensive ange starte with a series of 'Dumb' Terminals. through to highly intelligent Disc Based Units. Featured below is the 2632

Model 2632.

Compact Design.
Detached Keyboard.

Local input and editing of screen based data.

conspicuous protected fields. Buffered transmission of inpu

See us at: MCROSYSTEMS80 stand 42

CIPER IVITEMI UMITED



# Introducing the British designed and built 2600

Contracting terminal,

High definition characters. Anti-Glare acreen.

Selection of visibly

12.64 1.00

Advertisement Manager Harry Hutson 01-261 8359 01-261 8503

Class Ad Manager Brian Durrent 01-261 8597

Publishing Director
Or J. A. G. Thomas

Editorial Director
Chris Hipwell

IPC Electrical Electronic Press Ltd. Dorset House, Staniford Street, London, BE I SLU. Telephone 01-251 2000. Tolegrams/Telex: 25137 BISPRS 6

Bennets Offices. Bernstegbane 202 Synton House. Watsall Head. Bernstyllans 226 Telephorus 021-166 4838

Manchester, Statham House, Tellect Pictel Strategic Marchester M32 Interferon 061872 4211

New York: 705 Last 4 2nd Street New York NY 10017 Tel 4212) H67 2080 Telos 421710

Published wealigins Thirsday Registered at the Post Office as a coverpoyee Propiet copy 20p

· IPC Business Press Ltd- 1980

CIRCULATION INQUIRIES Requested readership 01-837 3636 Subscriptions: 0444 89188

EDITORIAL **Keith Jones** Tim Palmer Cleire Gooding Rory Johnston Mertin Benks Robin Webster 261 8031 261 8303 261 8025 8806 261 8170 8035 Bernard Allen 261 **Donald Kennett** Mike Marples Don Mitchell 261 261 8543 261 8361 ADVERTISING -Chris O'Hea Lloyd Collins 261 8658 Steve Bass Jan Carter 261 8293 261 8109 Harry Alken 061-872 4211 Binmingham Ken Parrott 021-358 4838 ADVERTISING - Classified Chris Prier Mark Pulver Ken Walford 261 261 8097 8019 len Feux . 261 Denise Smhh 261 Julie Hannaford 261 8098

Owen Kelly 081-872 4211

Q21-356 4B3B Ray Kelly 281 8016 Steve Robinson 261 8578 Peter Regis 261 8615 Computer Weekly has a circula-tion each week of over 90,000 including the highest fully requ-ested circulation in the UK.

Computer Weekly is sent free of charge to the following estagories in the UK and Line only: mangement serves, company sectionies, management derice according, chi equantic terres according, chi equantic responsible for computing, management from pelar consultations, collings and tangents. IP management programment, operature, computer salespect, field inchests.

Controlled circulation departments IPO Busi-muss Print (Sales and Utstributes) U.d. 40 flowling lives Lane. Condon EOIR Intl. Tal. 61-827 STS. Surface/pulleas for randers orlieds to down calegorius ISE ETS. UK Stations (2. oversion CES, questions streets 51-28, 40 and Convold SSS, by and Convold stations 122-50, animals to the little East or flowly lives Convold SSS, by and Convold stations 122-50, animals to the little East or flowly little East Convold to said Arison, flowly and South America to Santh Arison Co. Justice Intl. Section for substriptions should be seen in: IPS Section Press (SAD) Let, Utstript House, Facilities Press (SAD) Let, Utstript House, Faringer Press (SAD) Let, Utstript House, Faringer Press (SAD) Let, Utstript House, Faringer Press (SAD)

ISSN 0010-4787

lodata

# COMPUTERVIEW

THE US Justice Department launched its anti-trust case against IBM just over a decade ago and the case has now been in court for five years. Observers believe that agreement may be reached by June, bringing the pro-

tracted action to a close.

Speaking at a conference, The IBM Impact, last week, Dale Kutnick of the Yankee Group seemed to go a long way towards making the Justice Department's case for it. According to figures compiled by the Yankee Group, at the end of 1978 IBM had 71% by value of general purpose computer systems worldwide, with plugcompatible manufacturers holding a further 2%; 41% by value of word processing keystations; 37% of data entry and communications terminals; 35% of small business computers; and 1.1% of minicomputers.

The estimated combined value of these markets was \$125,100 million, of which IBM held an estimated combined value of \$71,270 million or 57%.

In addition, Kutnick estimates that the total user investment in IBM software is between \$60,000 and \$80,000 million, a figure which grows relentlessly every year. Even the Series 1 minlcomputer, much maligned for its first 18 months or so, really took off last year, and he estimates that shipments of Series 1s in 1979 tripled to

dominated by the minicomputer manufacturers, he sees hard for the minimakers. a very tough couple of years ahead for any minimaker which has not achieved annual sales from all its opera- are increasingly fighting each other with alternative rescued by the US government.

Trying to control IBM

tions of \$1,000 million. He sees companies like Data General, Texas Instruments, Hewlett-Packard as secure. as well as those with innovative products like Wang, Datapoint and Four Phase, but anticipates further problems for ones like Computer Automation, General

Automation and Modcomp. Kutnick makes a distinction between decentralised ocessing and distributed processing, defining the former as a \$15,000 million market embracing minicomputers, small business computers, word processors and so forth. Distributed computing he defines as communicating intelligent terminals and computers linked In networks, and he estimates this as a \$1,000 million market growing at 65% to 75% a year. It is this latter market which IBM's new products address. He believes with the 8100 and the 4331 both strong new IBM that by 1983 IBM will have between 55% and 60% of this inevitable product of the capitalist system by contenders for a market which has hitherto been market and it is this forging growth which will make life

products in the distributed computing marks by tions of all sorts of Data Processing Division by are available on the Series I minicomputer, current General Systems Division products support for IBM's set of communications to Systems Network Architecture, so that for the network of System 34 or System 38 businessor can be built around a 370 or 303X host from the Processing Division.

Kutnick feels that IBM could get a consenunder which it would agree to desist from [35] deemed by the Justice Department to ke competitive — and that it is saving formation.

General Business Group into a separate subden burgaining card in the negotiations.

Advantages to IBM of forming a separate sage include more efficient corporate managemental orientation for the office market and independent the General Systems Division to pursue pring and product unnouncement policies without at to the Office Products Division.

The problem in trying to regulate iBM is thing good for IBM is in general good for the user, and company becomes more innovative and men. petitive that becomes increasingly true By survival of the fittest must always lead :

IBM's Data Processing and General Systems Divisions We may well live to see the day when IBNL

# LETTERS to the EDITOR

## The same CII-HB answers IBM France IN your report of the interview 3032, and the DPS 8 which, at the development of public sector needs of the French plant.

# Doctor Lardner?

REGARDING Donald Davies' biography of Lady Lovelace (CW, January 10) it would be Lardner, whose lecture on Babaddress to the British Association in 1836, produced calculations which "proved conclusively" that it would be impossible for a steamship-to Cross the Atlantic.

Brunel, the designer of the steamship "Great Western" vhich was then being built at Bristol, challenged the accuracy of the calculations, but failed to convince either Dr Lardner or the audience that such a journey was within the bounds of possibility,

with Gerard Lamy, head of IBM top end, is more powerful than computing applications. We do tor over the four-way France's data processing divi- the 3033. sion (CW, December 6, 1979)

strange lapse of memory since it nounced the Cli-Honeywell France". bage's Difference Engine was Bull-designed DPS 7/80 and DPS

These large-scale DPS 7 and

there were a number of points DPS 8 machines are being concerning CII-Honeywell Bull. manufactured in France, a fact We would like to respond to the which makes nonsense of Lamy's statement that "it would You said Lamy did "not know seem to me to be preferable (in , what is the present 303X altern- the public sector) to buy top ative from CII-HB". This is a performance machines like the interesting to know if the Dr was only last year that we an. French, are at least made in

Elsewhere Lamy suggested attended by Lady Lovelace, '7as the same Dr Lardner who, in an mance range of the 3031 and support policy had hampered

# Project management

confirm that this is an area which has caused considerable problems in the past, and I am hopeful that my investigations may led to the preparation of some useful guidelines for future

I AM involved in a study of the much like to hear from anyone methods used in various organ- who would be prepared to coisations for planning and con-operate in this study. It would be trolling the implementation of computer based systems. I am to me in the first instance at the sure many of your readers will address below.

PETER HAINE Principal lecturer in computer science Computer Science Department Lanchester Polytechnic,

I would consequently very Coventry CV1 5FB.

# What that bar coding means

COULD you give a more detailed explanation of the bar code diagram published with Nicholas Benwell's report of the retailing conference (CW, November 8, 1979). It is not self-Otherwise this was a good

Didcot, Oxfordshire.

There is no basic difference between the European Article Number and the Universal Product Code, on which US article numbers are which US article numbers are based. The Universal Product Code has 12 digits and the European Article Number has 13. The first digit of the Universal Product Code and first two digits of the European Article Numberidently the country which issued the number (see diagram). The next five digits (four in some countries) form the mountaintent form

countries) form the manufacturer number. Each manufacturer gets a unique number on payment of a

Modula check Corner mark Left hand OCR-B Centre Right hand .guard bars 101 guard bars 101 roadable 01010 characters

fee to a national authority. The next five or six digits are used by the manufacturer to give a number to each product. Different numbers must be allocated for

aging.
The last digit is the check digit, which ensures the bar code has been read correctly by the scanner. - EDITOR.

#### 1984 and all that . . . .

each variation - for example, in

30 ST. JOHNS ROAD TUNERDOE WELLS, KENT Telephone: Tunbridge Well (1882), 41585

CRE to 79 NTGAUYTES DISK STORAGE • 64 Kbytes of Main Wilstory - STANDAR) • TEXT PROCESSING BASIC, CORD LEDITRAL

DSC-2 CIVE IN CONTROL OF TANDARY OF TEXT PROLOGORIA WITHOUT THAT TANDARY OF TEXT PROLOGORIA WITHOUT THAT THAT THE TANDARY OF TANDARY

THIS week's example of the strange things people say in the media about computers was sent in by J. Parry of Pilkington Bros. St. Helen's, who wins \$5.

It's inevitable that there will be some teenagers who get into trouble, whether they call themselves mode, rockers, hippies, flower-children, punks or they re just plain computer-programmers.

Virginia frontite in Woman

#### not believe this for one moment. What we can believe is that IBM France is unhappy about its reduced orders from the public sector. Since, however, IBM has a larger share of the French public - never protested & J. sector market than it has of the sector purchasing po

US public sector market, it is 303X which, while not being not in a position to complain. The agreement between CII-HB and the French State, which tected by the defat about it. The deliveries concerned represent only 45% of the data processing equipment CH-Honeywell Bull Parts

the US. The Frenche. 64/DPS systems has there, but not in these American Act".

the agreement which:

of room for IBM and the

he sector orders in far-

It is noteworthy the?

HBM has taken 50050

# Wilkes Computing

we have CILISIFICATION
Terminals Available



## LA 34 DECwriter IV

- convenient desk top des 30 char. sec. terminal
- Full 128 ASCII char sel
- low price

Wilkes Computing Tel: (0272) 25921 Telex: 449203

# Dol backs CSA study on micros in industry

The Separation of the applications of micro-processors in manufacturing industry, to be carried out by member firms of the Computing carried out by member times of the computing Services Association. Details have yet to be fixed, but the work will be on similar lines to the text processing study started last year (CW, August 30, 1979). CSA president Jim Donaldson described the

im of the work as to help users follow on from

the Dol's swareness programme. The idea was to ensure that the resource and know-how were available within member firms to react to demand for products, services and consultancy to do with industrial micros, and to encourage service firms to build up

That was the message for IBM

from Des Lee, chairman of the

IBM Computer Users' Associa-

Impact, last week, he listed five

policy changes ardently desired

"We want price stability. The present system of frequent price

manager's credibility, because it

s impossible to make the right

"We want ease of migration.

A user who needs to upgrade

from a 3031 to a 3032 has to call

in the plumbers and have his

computer room torn apart to

"We want less packaging. If you buy the VTAM access

method it comes packaged with

you don't want, but it costs more

Monotype Communications. It

is downmarket from the existing

model 80 but with user pro-

grammability and accounting

The two-screen model 150

Diablo printer, and the single-screen 75 with printer sells for

• From front page

ACOUSTIC

COUPLERS

turporate headquarters in

similar proposals from

MOORE REED & CO. LTD.

Walworth, Andover, Hente

Tel: Anddver 4156

financial decision if IBM keeps

changing the ground rules.

nstall water cooling.

need be for your customers. you're headlong into Systems

Speaking at the C/iS-Yankee livery of a new product than

adjustments damages a DP like this one to find out what it is

a collection of other software put new products into full pro-

to buy it separately. And once before opening its books for

you take the software you don't orders, so that it had a stockpile

ANOTHER word processor from and each screen has two drives

US maker Ontel has been mounted beside it. Software is

launched in the UK by also loaded from these discs,

The two-screen model 150 sells for £11,954 including one Diablo printer, and the single-

Both new machines use rather more complicated than

double-sided, double-density
mini floppy discs, unlike the 80
which was a limit and a limi

which uses 8-inch flopples. 286 by hand and which does not

K-bytes of text, or about 100 A4 necessarily correspond to the

CII-HB drive to lead in Europe

Weekly that the company had no interest in changing its company, we are sympathetic to proposals for collaboration."

CII-HB has made formal pro-

Posals to ICL and Siemens about European manufacturers, but

inlaboration in the fields of both ICL and Siemens have

icu commented that the label of the local and significant and

Imost all the mainframe CII-HB would like its net-

tandardisation and the ex-

manufacturers involving work architecture to be adopted

apolis told Computer discussing them internally

pages can be held on each disc. size of the printed page.

US word processor

launched in UK

Group conference. The IBM IBM's raffles or ballots.

Network Architecture.

"We want better deliveries:

there must be a better way of

deciding when a user gets de-

"We want more information

from IBM about future products.

Why can't IBM tell us the things that are in its plans so that we

don't have to attend conferences

going to do next?
"There's a great deal of fun in

being an IBM user, but I wish the

company had a better under-

standing of our problems. After

all, IBM's profits depend on us as

There was some discussion of

an alternative to the "raffle" to

decide the delivery sequence of

machines ordered in the first few

days after announcement. The

consensus was that IBM should

duction for a sufficient period

enabling fast switching from WP to DP, with different func-

tions on different screens if de-

nominal ledger, and sales ledger

The typist's controls are

"CII-HB has put an interes-

up operations sovereignty,

since this appears to offer most

of the features ICL has said are

necessary for a networking sys-tem, some agreement could be reached in this field.

If this involved buying Level 6

minicomputers, made by Honeywell in Scotland and Cil-

HB in France, such a move

would be much more politically

acceptable if Honeywell's UK

operations were European

users: let's talk more."

Users tell IBM: Stop

making life so difficult!

Charging users a premium for

Lee also made a pitch to IBM

early delivery was regarded as unfair and likely to lead to a

market developing in premium

users who are not already

members of the CUA, saying

that unless one is AT&T, it is

Information is needed on the availability of products and services outside the small group of consultants that are currently involved in the Dol's awareness programme

The work is expected to start in February The CSA's new director-general, Doug

Eyelons, in a review of current work, aninced that a delegation of government officials from Cyprus had visited the association in London to discuss contracts they are planning to place. More projects in Greece were being started, but stiff competition was being encountered from the French service

high were receiving vigorous

acking from their government. On the home front, the CSA is trying to tackle what Eyelona described as the "per-nicious" level of taxation of the living expenses of contract programmers. Represents tions are being made to the inland Revenue.

A study group on the difficult task of estimating looks like producing "Interesting and useful" results, Eyelons said.

A new directory of CSA members has been produced, listing the 170 members and the services they provide. Users interested in having an index to who can supply what service or product can obtain a copy for £15 from 73 High Holborn, London, WC1V8LE.

impact on the company.

Office," he added.

# Transmits at 9,600 bps

COMPUTER WEEKLY, January 24, 1980

sion to a remote mainframe at speeds up to 9,600 bps is one of the application areas for the desk top computers from Matsushita of Jepan that are now being sold in the UK under the Penesonic name offered with a comprohonsive list of applications software.

Application areas include education, retailing, property management and rotaling.

(CW, January 17).
The machines in the Penesonic range, including the Model JD800U shown here, are primarily achieve anything with the comwhere enough users were intended for use as stand-alone small business systems. They are sold in the UK by Teletronics of worried about a particular problem, the CUA could have an London which has been the dis-tributor of Panasonic business "We also put the user's case to equipment in the UK for 12 years.
Teletronics is appointing regional distributors to market and supother organisations like the Post

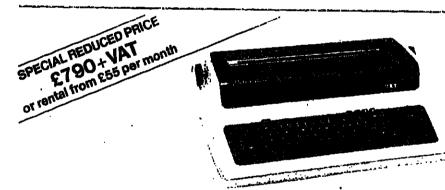
port the Panasonic machines which

#### Home swaps

A COMPUTER matching system to help people swap their council houses is being considered by the government, which has allocated £400,000 in the current Housing Bill for its development. The idea is to increase labour mobility to areas where there are jobs.

# HAMILION

There's no end to our terminals!



DIGITAL LA34 DECWRITER IV

Features • Prints full 128 ASCII charocter set Switch-selectable IIO and 300 balled rate.
 Variable character sizes Adjustable line spacing

 True 30cps print speed fractor feed Numeric key pad Low paper switch

HEWLETT PACKARD 2645A DISPLAY STATION Optional fully integrated, bi-directional, dual cartridge topes provide up to 110k bytes mass storage for each tape and are easy to use with last search data entry text editing and

Sale price £2,100 or rental piece from £130 per month

virtually all data processing equipment. Dual connectors are included for use with data ter-minals, minicomputers, moderns

controlled, minidiskelle system featuring over 200,000 risable character storage. A powerful disc erator and high speed string search provide ability to add. delete or replace date with oncommand RS232 compatible interfaces provide connection to

TECHTRAN 951E

and lime sharing systems at switch selectable data rates from 110 to 9800 baud. Sale price £1.235



5 x 7 dot mainx print head prints al operator selectable speeds of 10 and 30 characters per second Standard ASCII keyboard with colculator type embedited numeric keypad and Iyon key roll over leature Complete with its briefcase like carrying cast the 745 weighs only 13.5 pounds

TEXAS INSTRUMENTS 745 PORTABLE The 745 is an 80 column.

thermal printing terminal with a built-in acoustic coupler and EIA

interface The quiet operating

Sale price £1250. orteniarprise from £74 per monte



TEKTRONIX 4012/13 GRAPHIĆ DISPLAY TERMINAI Thinch screen provides up to 1024X by 780Y viewable graphic points or as many as 2590 characters per display The Toletype style keyboard samplines input, while the thumbwheel con-trolled cross-hall cursor enhances graphic mout The 4012 is even ble with upper and lower case ASCII alpha nurgencs whilst the 4013 elso provides 94 symbol APL Both ternings offer plug to plug compatibility with all ophons

Sale orice from £4.027 or rental price from £277 per month

Dusseldori Toronto -New York

**《大学》** or rental price from £68 per month

laces and accessomes in the

SALE WARRANTY - MINIMUM 3 MONTHS LABOUR AND PARTS

ndon 01-460 8900 minghan) 021-236 3561/ Manchester 061-848 8338/8434 Central Scotland 0501 43182 Aberdeen 0224-26301

# Signs of these baffling times . .

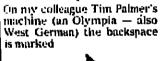
wondrous machines we were as now a trendy subject and tating machine in our office people would get very emotiopeople would get very emotional about their pet ideas on how human beings behave. Maybe we would all have been enlightened by that course i once saw advertised by the Open University "The fundamentals of human nature".

Colleagues would argue got it to work last time. strennously that it was obviously'more efficient for lift call buttons to be labelled



than "UP", and that this principle should be extended universally. I insisted just as strenuously that it was not obvious, because of all the goes. But what on earth do situations where there was no possible picture symbol. How lo you make a symbol for "push" or "pull", or "no waiting"?

Then you get disagreement wer what the symbols should e. On my typewriter (an Adler - West German, you see) the backspace key is marked



it makes for fascinating logical arguments over which point of view is correct, but for those of us who just want to get some typing done the label "backspace" tells it all.

International road signs are something else again, Hands up all those who can instantly ell the difference between the signs for "divided carriageway" nds" and "road narrows", without thinking about it, as they flash past at speed? The sign meaning "no forries allowed" looks just like an invitation, "Do drive your forry

from Qume

55 cps KSR and RO

delsywheel printers

Silent 700 portable 🕺

TI 820 KSR and RO

TI 825 KSR and RO

**TELETY PE** 

from NEWBURY

TEXAS INSTRUMENTS

Wilkes Computing

nents at a job I had in the dun—for the benefit of ignorant and distant about how we foreigners who can't speak the would label the buttons on the lingo, and I resent it with all my xenophobic being. My probuilding. Ergonomics was then blem at the moment is the dic-

> frequently enough that I can't remember how I eventually I can just about see that

buttons that must have been

carefully thought out to baffle

a herd of FRSs. The instruction

book of course was lost long

ago and I use the machine in-



forward" or "rewind", and l will know which as soon as work out which way the tape



mean? Then there is a bigger button that has no label at all and yet another on the

What happens when you rush all the different combinations of buttons is a marvel of unpredictability. It adds an extra spice to life, that little thril we all need, when you can never be sure when you are talking that anything is being recorded at all. The excitement will be lost when the ergonomists rediscover those useful little things called

words, such as "stop" and • Is this a record? You will have noticed that the Post Office has

changed all the 2p slots on coin box phones to 5p, to make us pay for even more connect time that we do not use. The other afternoon seven coin boxes in the London Press Centre were converted. By the next day four of the coin mechanisms were out of order! On well, maybe it wasn't the machines' fault; outraged callers could have been trying to force in twopences with sledge-

LSI 11/2 processors

to 20 mbytes

optional multi-user

volume orders

operating system
• full range of software

discounts available for

Wikes Computing Tel: Bristol (0272) 25921 Tolex: 449205

up to 60 kb memory

4 serial line interface

LA 120 180 cps KSR

on-line disk storage up

# MICHIE'S PRIVATEVIEW

A SCIENTIST who pulls a long face over the difficulties of his work, whether they emanate from Sod's Law in the laboratory or from the wickedness of the human heart on committee, is like an infantryman griping about pack-drill or an airhostess about jet-lag. The late George Formby made the only appropriate comment.

'll serves me right, I shouldn't

It jolly well serves me right!" A scientist has, however, an entitlement, I would say a duty. to speak out when his training enables him to perceive an approaching communal hazard. The failure of recent technological events to penetrate the cloud of unknowing which still envelops our realm should make us give thanks that Britain still has scientific minds of distinction who are willing to tell us the truth - not only about technical facts, but also about the coming social consequences of what we

1950, telephones up to 1960). computer people are doing. Sir Ieuun Maddock, secretary Concerning this last point I feel some scepticism about the to the British Association for the causes of some of the costs. Are Advancement of Science, and these really attributable to innow Principal of St Edmund herent technical and logistic Hall, Oxford, was in at the beginning of the Ministry of Techfactors? I see them as being in nology in the mid-1960s, and part sociological. It was in no subsequently chief scientist to sense necessary or inescapable the Ministry of Industry for that the Concorde project should have been planned on a eight years. His earlier scientific technically sub-optimal and vork had earned him election to economically doomed basis, the Royal Society. He has now rather than following along the brought factual analysis to bear Barnes Wallis line of thinking in on today's upheaval of technothe 1950s. But in view of the logy and its effects on The Fustubborn unclubbability of ture of Work, to quote the title of his gripping and informative Wallis himself, it would undoubtedly have been more enbyable for all concerned to do

His first conclusion is that the "technological explosion" is indeed a reality. As a rough and ready measure of technical change over historical time he lists the following.

(a) How far could a person travel in one day;

(b) How many people could witness an event (e.g. sports); (c) How far and how frequently could people communicate

(d) How many people could be. killed by a few warriors; (e) How many calculations

could a person perform in an' After discussion of the limitations of natural resources and problems of the population expansion, Maddock turns to the uptake of technology. Given certain minimal levels of literacy and numeracy, less advanced nations can fairly speedily acquire what he calls "plateau technologies" (i.e., those which have already entered the

system

limited.

phoneusnow

and ask for Sales

Desk. Supplies are

LSI Modules

KEV11

MRV11

DLV11

DZV11

**TU58** 

**RXV-21** 

ready for delivery now

# The cost of scientific illiteracy

diminishing returns phase television, to the economic effects of the refrigerators). But very adliquidation of the British Empire vanced technologies, which He does not draw one of the inferences which I would have break completely new ground. become the preserve of a few drawn, namely that the cost of developed nations, sometimes scientific illiteracy in governthrough giant multi-national ment has now become too high a corporations or multiprice to pay for retaining the old government enterprises. Mad-dock perceives difficulties here light-hearted style of science agencies in arriving at their detoo, concerned with cost, and also with the "diminishing Sir leuan Maddock's essay return" effect seen as somehow

reserves some of its most telling points for "the mighty chip". He categorises the impact in the following ways: 1. Ability to extend or even dis-

place man's capacity for thinking, his intuition or his judgment. Pervasiveness; virtually no

field of activity can fail to be influenced. Widespread replacement of mechanical and electromechanical devices.

Speed of advance in performance more than one hundredfold every ten years. 5. Reduction of cost, at even steeper rates of change than sheer performance. In a period of inflation the price of each unit of performance has decreased one hundred thou-

sandfold since the early 1960s. Reliability, far exceeding that of any other engineering de-

. Flexibility. Because microprocessors are programmable lowship rather than of slidetheir performance can be changed quickly and cheaply.
Maddock comments: "This collection of qualities add up to Court, Marsham Street, SW long as we can afford this, well

is head of the Maddin

Unit at Edinburgh U the advent of the most read. able new technology early

Intelligence Research

confront mankind." mobilising an adequate no. response all lay emphasi thinking in terms of look strategies "rather than ar cession of short-term tacia expedients," But wheat political heads of govern departments necessarily horizons set by the next &:

Maddock. But how to encor.

The booklet's analysis: general deeper than its a: mendations. But let this ್ಷ ಬಂಡಿd to each reader to ಉ own prescription. To be dedesigns for the Ark.een's the rains come, is belief. having to draft them!":

Honald Til REFERÈNCES

ture of Work. London

# **DEC** diagnostics centre promises big savings in hardware maintenance

within five years.

expected by Digital Equipment from its remote diagnostics centre now opened at Basingstoke. users in the UK and Ireland with PDP-11/14, 11/70 and VAX machines at no extra charge.

A similar service has been available in the US from DEC for two years and there are now about 1,800 users. Not long after the US debut DEC promised that the service would be introduced In Europe (CW, October 19,

In addition to Basingstoke a centre will soon be opened at Valbonne in Southern France to cover the remainder of Europe. and DEC expects the service to

#### Som handshake for itt chief

WITH a golden handshake said to be worth \$6 million, Harold Conson has given up the chairmanship of ITT nearly a year early and is succeeded by Rend Araskog. Geneen came from Raythson 20 years ago to become ITT president and since then the corporation has increased sales from less then \$800 million in 1959 to \$19,400 million in 1978.

Areskog joined ITT from lonaywell in 1986 and became chief executive fast summer i place of Lyman Hemilton whom Geneen had originally Geneen had originally appointed as his potential succassor. Hamilton laft the com

DEC emphasises that the Basingstoke system will remote diagnostic service is not an additional diagnostic facility, but will be the principal method of diagnosing hardware faults on medium and large machines.

In future all medium/large DEC computers will come with the console and microprocessor based modules needed to interface with a remote diagnostics system. The PDP-11/44 and VAX machines are already equipped in this way and existing 11/70s can easily be modified in the field. If a machine goes down the

diagnostics procedure starts by the user phoning the Basingstoke centre via a Post Office Free Phone line paid for by DEC. The user then explains the symptoms of the fault to the DEC engineer at the centre, and if diagnosis is considered necessary the faulty system is connected directly to the diagnostics system at Basingstoke which is based on two PDP-11/

No more manual intervention is required until the fault is identified, a process that takes an average of just under two real time programs had already hours, according to DEC. The Basingstoke engineer then P-E. phones the DEC field service Th office nearest to the user and tells the maintenance engineer there exactly what parts are to 100 terminals each. They will required, so reducing the handle all day-to-day branch number of parts that need to be banking activities and will con-

efficient and speedy the maintain detailed information on each user's configuration and its maintenance record. The Basingstoke system can also carry out a diagnosis before preventative maintenance if time is available on the user's

# Perkin-Elmer

CITIBANK branches all over the Middle East and North Africa are to be equipped with Perkin-Elmer Model 3220 computers under a contract worth \$5 million to the minicomputer sup-

Perkin-Elmer says that a key factor in its success was its Integrated Transaction Controller which enables NCR Cobol programs to be converted easily. The 50 3220s will replace NCR 8200s for which many batch and been developed according to

The 3220s will have up to one megabyte of main memory, two 67 megabyte disc drives and up taken to the user site as well as nect to Citibank's worldwide message switching network

Russian greeting card protest Greatings cards buyers at the Harrogate Toy Fair were met by a bovy of shivering girls organised to protest against the import of cut-rate Christmas cards from Russia. An agency owned by Control Data has been handling the card doal (CW, November 29, 1979) and the

# Adler awarded Post Office Telephonas contract

protestors are claiming that its purpose is to finance the purpose is the purpose is to finance the purpose is to finance

ADLER Business Systems is to perators all over the country.

The TA20s will be installed at the PO's DP centres at Bristol 9300 reads both the OCR A and and Derby and will be used to bar coded information and the check the call data and encode it on the eards in OCR A fount for reading by Crosfield 9300 OCR

The Adler kit will replace 70 ageing Floridata encoders

Information encoded in CCR supply the Post Office with 37 A comprises additional details of TA20 desk top computers for calls. Standard information like processing cards filled in with the caller's number and the telephone call information by duration of the call is entered on the cards by the operators in the form of bar codes. The Croshold complete system is called Input

> will remain the predominant method of capturing

System for Operator Controlled

# **UK** subsidiary of Data Translation

COMPUTER WEEKLY, January 24, 1980

A SUBSIDIARY of the inter facing systems commany Data ranslation has been established in this country to market the parent company's range of for microcomputers, also the range of minicomputer interface and controller products. manufactured by MIDB Systems, with 4t EE 488 laterfaces made by Zin Tech.

The new UIV artisadians, based at Gecko House, Softon Park Industrial Estate Reaching, 13 with Carefuld Lead Systems a

# **FOCUS**

hings the way they did.

One of the perks earned in the

process of becoming an ad-

vanced civilised nation is the

freedom to have decisions taken

in an atmosphere of good fel-

ruling and penny-counting. So

intrinsic (examples: railroads up

to 1930, motor vehicles up to

# A necessary evil

auditing teams in the comuter installation greeted with egarded as a necessary evil me which requires doors to be kept locked and logs completed for the duration of the audit. At he worst, they are regarded as an unmitigated disaster area. Not only will current production be hampered, but carefully planned implementation sche-

course.

The reputation of auditors involved in DP is far from good.

Many DPMs believe that their latest data prep recruit would be more familiar with a computing system than the average auditor. On their arrival, the DPM often finds it beneficial to provide the auditing team, with a few basic principles of computing. Terminals, for example, are not necessarily interfaced with hard-copy printers. Even when they are, editing proced-ures could confuse any compar-

Punch cards are not now standard issue in all installations and their replacement, disc packs, should not be removed from the computer room. The library is not out of bounds to the operations staff, especially

during the night shift. the CPU, peripherals, program-

THE current state of computer mers and analysts, Usually the auditing in the 'UK, it is senior programmer is first on the generally agreed, leaves much to scene complaining to the DPM Whinney, "R is easied." be desired. Particularly desirable—that the auditor should be given is the need to train auditors in another trail to follow. The one some basic DP knowledge and the is currently following will lead to a dead end — it was Seldom is the arrival of dropped over two years ago.

Next to arrive will be the senfor analyst who announces that he is after all going on that datacoms course starting tomorrow. Could the DPM rescue his team from the scutterbrained auditor, otherwise the analysts' brains will be scattered around the back pages of Computer Weekly.

The present state of DP techhigh and very much dry. The day when they could contentedly count and control punch cards have passed. In fact any auditor able to comprehend real time database working would quickly find himself being offered a job in the installation.

Not all auditing teams, how-ever, are still in the prime generation period. Given a little learning in a management or business school, they believe they have more skills and DP background than any known DPM. Such auditing teams are determined to find major snags; in the DP operation in order that they can promote to senior. company management the necessity for a full-scale DP audit appraisal. The DPM is in all probability well aware of the shortcomings of his system and knows that the femely, additional memory, would cost far less Stage two is more advanced, nal memory, would cost far less. This course embraces the role of than any suggested and it survey.

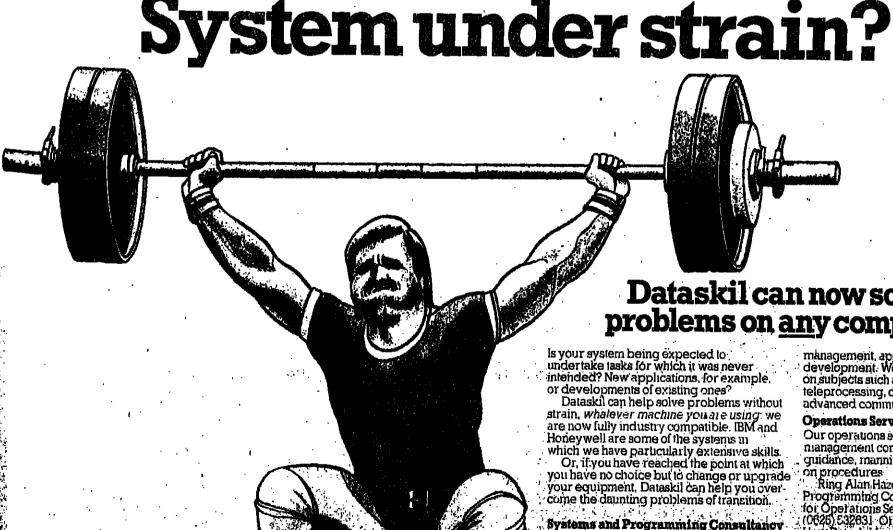
of the accounting fum ir · mulitors to be proficients puter skills rather thank. way round. It's the tai processing man whost he any good at 34. Whether DP profession any desire to become doubtful. But at least the not make such a life accounting as do see

A little learning mi dangerous thing, esp. auditors, but at least it far better than the knocking of the DP pro

> 10 years of From Compute of January 22,

hon a morekali

**SREAKTHR** 



Dataskil can now solve problems on <u>any</u> computer

ls your system being expected to 🗀 undertake lasks for which it was never niended: New applications, for example or developments of existing ones?

Dataskil can help solve problems without strain, whalever machine you are using: we are now fully industry compatible. IBM and Honeywell are some of the systems in which we have particularly extensive skills.

Or, if you have reached the point at which you have no choice but to change or upgrade your equipment, Dataskil can help you over-come the daunting problems of transition.

Systems and Programming Consultancy

We offer a consultancy service covering leasibility studies, project costing and

management, applications and software development. We can give advice in depth on subjects such as database development teleprocessing distributed processing and advanced communications networks.

**Operations Services** 

Our operations service includes management consultancy, practical guidance, manning, placement and advice. on procedures

Ring Alan Hazell to: Systems and Programming Consultancy, or Tony White for Operations Services, on Wilmslow (0625) 532631 Of write to General Services Unit Dataskii Limited, St. Arin's House Alderiev Rd. Wilmslow, Cheshire, SKB THG Dataskil has offices throughout the U.K.

all systems The Computer Professionals

TIM PALMER REPORTS FROM THE.

C/IS CONFERENCE ON IBM

for programmers and analysts

# Sound TOPS training contributes to a company's success

it is even more crucial to choose suitable people to help the company in the all-important first year of trading.

So it was interesting to discover that a one-year-old software house in Windsor is staffed by an unusual collection of exteachers, ex-social workers, a

ONE of the most famous artists of the Renaissance

period was Albrecht Durer Among his best known work: is an engraving entitled Metencolia, which depicts a philosopher surrounded by various scientific tools and mystic symbols, plus a 4 x 4 Magic Square in which the numbers to and 14 occupy adjacent cells, thus "dating"

Not content with this little mathematical flourish, Dürer also made the Square "symmetric", in that all eight pairs-of-numbers — formed by trucing a line from one integer, through the centre of the grid and across to the symmetrically apposite - total 17, which is Unlike the usual procedure, I course exactly half the Magic Constant of 34 for this

type of square.

Can you reconstruct a Durer grid from these clues? See page 53 for solution.

lady whose previous occupation

What's more, these people have been responsible for building up the company from scratch, and it has been their efforts and skills which have brought success and profit to the

products of TOPS programming courses - people who have rejected one career for a totally new line of work of which they had no previous experience.

Universal CMS in Windsor started a year ago as an offshoot of Universal Film Laboratories and was set up by David Lloyd. Terry Forsey, the software manager, is an ex-Burroughs man, and now all the company's clients are Burroughs cus-

A staff of 12 deals with programming, which is split into two sections work for the clothing industry, and the remainder, each division employing six people. Packages that have been written for clients in the rag trade have been the main cause of Universal CMS' success over the past year, and the Universal Clothing System package was written by

Forsey went to TOPS to find his staff rather than the organisation approaching him. "We wanted people with good basic knowledge who could develop

British Rail clerk and a young CDI/TOPS courses, but some we have been going back to

TOPS ever since for staff." The average age at Universal CMS is 27 and so far no-one has left the company. In fact everyone seems to be throwing themselves wholeheartedly into

"We don't keep a check on hours," said Forsey. "Most people work at weekends und this certainly isn't a 9 to 5 job. But being a small young comnany, we can afford to treat our staff well and we always make a point of taking a day off every quarter all to go water ski-ing or

Not surprisingly, the mixture of various backgrounds and skills in the company has gone a long way to overcome difficul-

"We have one girl working here who used to be an operator," explained Forsey. "She now checks all the programs before they go out and OKs them from the operators' point of view. Then we have an exengineer, which is useful because he can tell if the thing is actually working. This saves a lot of time and trouble at the customer end. Our ex-teacher is responsible for training new

staff when they first join the Tony Parkinson joined the company in March direct from a TOPS course. Before that he had been a fork-lift truck driver, and had worked in an adventure playground in Belfast. He was not sure at first if computing was really the career he had

when he saw the TOPS ad in The Guardian he felt that it would be a step in the right direction". He attended the CDI/TOPS computer programming course in Guildford where the emphasis was on teach-yourself techniques, in contrast to the ICL/ TOPS courses, which we have Already discussed on this page.

been looking for all his life, but

Parkinson had nine interviews as a result of the course and out of two job offers, the one with Universal CMS appealed to him

members of the company's pro- after renumber of roles which they of employers. "We went to TOPS because "We went to TOPS because small firm employees play a from the prejudice and suspicion

Forsey said that people from good way of getting soundly TOPS had been round to visit trained, reliable staff, We didn't Universal CMS, to ascertain want to employ any contractors what went on in a small com- when we started because they

from \$47 per month

TREND • QUME • DIABLO • LEAR SIEGLER • TALLY • PERICOM • TECHTRAN

student, Alan Bailey, at work

An ex-TOPS

pany and the differences in the definition of a "programmer" between a large firm and a small software house.

The TOPS graduates at Universal CMS were systems analysts, tutors and indeed part and parcel of the entire company administration, as well as programmers. "Everyone here," said Forsey, "has been involved in customer training and support as well as programming.

The things we pride ourselves on here are quality and continuity. This means that if a customer meets one of our staff. e is more or less bound always to meet the same one. This is the sort of reliability we like to en-

"It is rare that a programmer would arrive at the stage where he is meeting managing directors of a firm within a year of joining the business, but in a small company this can happen and it enhances an employee's career as much as it does the

firm's reputation. All work is done at the company's office at Old Bank House in Windsor, a Georgian building containing two Burroughs B800s and a B80. Demonstrations are held either at company premises

or at chosen Burroughs sites. Because of the prestigious location and the impressive appearance of Old Bank House, several of the spare rooms in the premises have been furnished to accommodate senior management meetings, conferences, seminars and courses for outside customers., Rob Burbridge, who is in charge of this side of business, described the operation as very successful, "if sometimes a little like Fawlty Towers," as Universal CMS also makes itself responsible for refreshments. from buffets to full banquets. The company will soon be running its own courses and even-

tually hopes to utilise existing staff skills for this purpose. Since joining, Parkinson has Forsey was provoked into telbecome one of the most useful ling us about Universal CMS gramming team, but he is much weeks ago about the plight of more than a programmer. In a TOPS students who had suffered

perform in a bigger organisa there are no recruitment fees to pay and in my experience it is a

ALSO AVAILABLE.

don't have any company loyalty, launched themselves and that is essential in a company as small and young as this. immediately been counted

Customers actually say to new and enterprisoner me 'l can't get my staff to work all weekend, how on earth can Programmers, as we have seen from this page over the last months, have many opportunities in the world of work where

they can end up in a variety of different environments and circumstances. Often these opportunities can depend very much upon their luck, location or circumstances. People who take TOPS courses usually take a chance insofar as they cannot predict

exactly what kind of situation they are going to find themselves in at the end of it all except that they will be computer programmers.

Those who work for companies like Universal CMS are fortunate. They have not only

new career but where their own effort:

immediate impac

From their point d TOPS was a good thing? as we have seen on it. may not think so. Butemployer, the resulting he endless. Young persound training in proper armed not only with: to start a new and day career but also the above vantage of several part perience of working

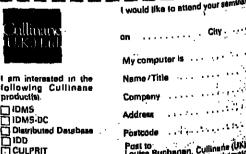
unrelated background make ideal employes Why don't moter: take the risk and dest. of the misconcepus neers have of "ne in" who are often belief. do a job than me.

How can I be more responsive to end users and management?

+ INTERACT

DEVELOPMENT SYSTEM.

BUY IT ALL, OR ONE PIECE AT A TIME



DIGITAL • ANDERSON JACOBSON • TRANSDATA • AM JACQUARD • MELLORDATA • NEWBURY LABORATORIES • lows one MVS or SVS "virtual achine" to run with very little improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in overall throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throughput for MVS/SEA, desertion time and up to 12% improvement in throug

Monitors and Separate P/T Cassette units from 260 per month.
Separate Diskette units from 260 per month. Contact Mike Brooke or Philip Ely. Tel: Byfleet 53151 compatible) from 233 per month APL from 247 per month VT52 and other options

by Judith Morris SOFTWARE FILE

# VM is resurrected from the grave

and even medium-scale 370s

found MVS too complex and

not of course mean that MVS

will not continue to be the IBM

lagship operating system for

However, Yankee Group

tudies at user sites indicate that

adopt MVS as hard as it was a

Kutnick believes that there

are currently about 2,000 MVS

users, and 1,300 to 1,500 users

who have licences for VM. But

that is not necessarily a measure

VM/370 very infrequently.

of usage since some sites use

Enhancements already made

to VM by IBM parallel those

achieved by Amdahl's VM/

that they enable a production

workload to be run under MVS

in parallel with development or

testing under VM without de-

grading performance unaccept-

useful for testing a new release

duction workload under the

head could be as much as 40%

compared with running MVS in

native mode, and Amdahl

No UK release dates have

In the US, the MVS/SEA

been set for the two new products, but VM/SA is expected to

release 2.0 is available this

month and is for use with

MVS/SE was announced with

firmware and software which

provides a performance

improvement of up to 20%. It is called Extended Facility on the

303X machines and is also avail-

able as a field-upgrade on 370/ 158 and 168 machines, where it is

called Extended Feature. MVS/

SEA from Amdahl provides

counterparts of many of the ex-

which are functionally equi-

valent to those offered by IBM's

hardware/software combina-

Amdahl claims up to 13%

Release 2 of IBM's MVS/SE.

10% when using VM/PE.

be announced shortly

Without VM/PE, the over-

arge machines.

couple of years ago.

took too many machine cycles.

ement from IBM clearly chabilitated the VM/370 "MVS was originally meant to be this 'unifying' operating ting system for mid-range system, but users of small-scale nes, there are now signs the proponents of VM are to win an even more ficant victory.

Until about two years ago. 16/370 was very much a candidate for the chop among IBM operating systems, and a strong lobby within IBM is still believed beantinathetic towards it.

However, the very significant advantages of flexibility it confers, coupled with the ease of use of the associated CMS conversational monitor system, are becoming ever more apparent as the falling cost of hardware reduces the disadvantage of the kish overhead it imposes.

Dale Kutnick of the Yankee Group research organisation believes that when the H-series is announced, it will become clear that VM/370 and not MVS will become IBM's "superset" operating system.

Kutnick outlined his views at the C/iS conference "The IBM impact", in London last week.

Amdahi to introduce

operating system

Amdahl includes an assist for

offering performance improve-

ments comparable with those

provided by IBM's Virtual

Machine Assist firmware, and a

second release of the company's

MVS/SE Assist, which enables

users to run IBM's MVS/SE on Amdahl 470s.

The new VM/SA product has

been found to reduce overall CPU execution time by between

and 25% at test sites, the

improvement depending on

orkload, job mix and other

variables. Since VM/370 allows

run concurrently in the same

machine, performance varia-

Amdahl stresses that the

anulation of IBM's Assist for AM, but attacks VM bottlenecks

a similar way. It reduces the

aber of instructions required

mulate 15 frequently used

lleged instructions, and

ers emulation routines to

n its VM/Performance En-

t product, VM/PE, YM/PE is a hypervisor which

laximum advantage of the

says that VM/SA is

rly effective when used

a software

dons are difficult to predict.

further aid for VM/370

KEW software on the way from native mode, and is particularly

the VM/370 operating system of MVS while running the pro-

previous release

"It has long been an IBM goal operating systems into one superset operating system that all of the previously developed applications (regardless of their gradinalive operating system) and be

He sees VM/CMS as particu-Noting that OS/VS1, DOS/VS larly attractive to both first time and remote users. Since, he and MVS can all be run under VM as guest operating systems, says, it also handles transaction alongside the VM/CMS native processing guite well, it should mode, he believed that with exeventually supersede TSO and the VSPC "personal computing tensions VM/370 could evolve into the superset operating sysfacility, and even CICS. tem that IBM wants. This does

Architecture, SNA.

the one already offered between

CICS and IMS, and support for

VM within Systems Network

He anticipates that at the bottom end VM/CMS, which he says runs quite efficiently in 512K-bytes, will play an import-ant role in IBM DP Division's plans for office automation since IBM has written office BM is not pushing users to automation programs under

## IBM's solution

of running a production work-load in parallel with VM/370 without imposing an unaccept-able overhead differs from the plution offered by Amdahi (see

ils page). Where Amdahl effectively where Amdahi effectively imposes a continuous further overhead on all other virtual machines under VM except for the one in which the production workload is running, IBM has added a feature to the VM/systems extension which en-

systems extension which en-ables the operator to shut down and bring up VM using simple commands at the console.

This means that the operating system running the production workload can be switched to up in active mode and once the run in native mode and, once the run is finished, VM can be brought up again with an initial program load in either case. The facility is available for MVS, SVS and OS/VS1, but to

system must run in a virtua equals real workspace so that is requires no paging.

# 'IMS will become

IMS? How can IMS users' interests be preserved if IBM goes shead with its plans to introduce a relational database, the socalled System R? Dale Kutnick's view is that

> MS will become a subset of the relational database, running "Since IMS is a very hierarchical database, the antithesis of a relational database, this will be difficult. It could be the rea-

son for the power of the new 3880 disc storage control unit. launched with the 4341. "The 3880 is a 5 mips processor built in fast emitter-coupled ogic (CW, March 1, 1979) which

eads observers to believe that it will be used as a database processor in the future." Kutnick believes that not only

he relational database plus IMS, but also CICS might run in the 3880 in the future. Amdahl is offering an HDAM

ganisation and to determine and ensure optimum placement of data in the database. Inputoutput requests needed for retrieval are claimed to be reduced by between 10% and

AVAILABLE in September is a intersystem communication function from IBM which enables IMS/VS and CICS/VS systems to communicate directly with each other, both in one processor and in different SNA-connected processors. It enables a terminal on a CICS system to interrogate and update remote IMS files and send messages to terminals on the remote system. Terminals on an IMS system can equally be used to schedule transactions on a CICS system.

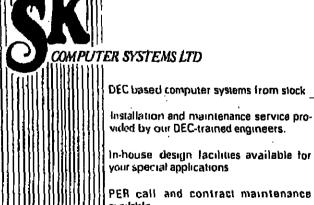
Hoskyns Modular Application Systems (MAS), are a total systems approach to the information and control requirements of organisations. During the past ten years MAS elements have been built for most applications in industry, finance and commerce. Over 1500 MAS elements have been installed worldwide. The table below gives an overview of some of the major sectors covered by MAS and other Hoskyns standard systems.

# Hoskyns Modular Application Systems

Industry or Commercial Sector Hoskyns Modular Application Systems Computer MAS II MAS-M MAS-H KIBS Special Std Sys. Benking Foundries Leasing and Hire Purchass sie Contract Hire and Fleet Control If you would like further information MAS run on a wide variety of computers, including IBM ICL on any MAS, please contact Brindley Reynaud at Farringdon Road.

Hoskyns Group Limited 91 Farringdon Road London EC1M3LB. Telephone 01-242 1951

Hoakyns Group Limited is a whollyowned subsidiary of Martin Manette, an International corporation with a turnover of more than 82,000 m; MAS is supported firroughout the world by Hoskyne and Martin Manetta Data Systems with a professional staff that accepts 2000.



DEC based computer systems from stock

In-house design facilities available for your special applications

PER call and contract maintenance

Export enquiries welcome.

) delivery

YORK HOUSE STEVENAGE ROAD HITCHIN, HERTFORDSHIRE 964 9DY TEL: (0462) 31116, TELEX: 826718

10 cps from £46 per month

\$87 per month

263 per month

Daisy Wheel from £104 per month

Portable from

120 cps from

How can I speed my applications developmed

IDMS DB/DC + OUTLINE QUERY + INTEGRATED DATA DICTIONARY + CULF

**⇒ AUTOMATED APPLICATIONS** 

Phone.

impared with running MVS in pending on job mix, measurement interface

mas in the 28 to 29 nanosecond range.

designed to pre-process signals and make it possible for most.

Action monitors to hendle them: It is already available for the land will be available for the V/7 models in June.

# Big increases in your wages, but...

bring a smile to your face - salaries also vary with the nabetween last spring and ture of the company's business. autumn the salury levels paid to. At companies in the chemical operations staff went up by more, in percentage terms, than those of anyone else in the in-

But don't smile too broadly. As you know only too well, programmers and analysts still pull industry, we see that a telex considerably higher salaries operator gets £3,095 on average than you.

I say this after reading a survey analysing wages and salaries throughout the country. It is from Reward Regional Surveys: and is based on infor-

belonging to 12 regional "clubs". The survey, the seventh in a regular six monthly series, states that the sulary paid to the average operator and senior operator rose by 13.3% and 8.1%, out like a beacon — operators own career path to follow as well respectively. In money terms, that means un extra £411 for operators and £322 for senior operators.

By comparison, the salary of the average programmer went up by \$203, or 4.4%, while the analyst's rose by £440, or 7.8%.

The survey indicates that national average salary for operators is a princely £3.500. hile senior operators now earn

Needless to say, programmers and analysts fare considerably better: they get £4,800 and £6,100 ner annum in each case.

Your average manager — the survey doesn't specify DP or operations manager — earns some £8,000, which includes a spring/autumn rise of £617, or

Statistics are also analysed from a regional viewpoint. As you might expect, we find that the best paid operators and senor operators are in the Central London area, with £4,224 and £4.950 per annum.

Staff in the Nottingham and Derby areas - £2,886 a year for operators and £3,129 for senior operators — are the lowest paid members of the operations

PERIPHERAL HARDWARE LIMITED

Armfield Close, West Molesey Surrey Telex 922175

industry the operators get £3,525, a fair bit more than the £3,148 paid to staff in the service lustries. Worth remembering If you're thinking of a move.

Looking outside the computer while a clerk gets £2,650. The national average salary for a draughtsman is £4,356.

What we really need is a breakdown of statistics into categories relating to the size and type of muchine operated -mation submitted by companies IBM, ICL, Honeywell etc - but that is beyond the scope of such

Figures such as these can be misleading, but one fact stands

Association is engaged in talks

with the Inland Revenue for one

main purpose — to look after the

That message comes across

loud and clear in a letter from

Responding to an Op Spot

report about a meeting held on

contract operating by contract staff agency CoOperators, (CW,

November 29, 1979), he

A CERTAIN operations manager

188 come up with an unusual

nethod of overcoming his staff

shortage. He has offered sums of money

to his existing staff for each new

operator they introduce to the

Doug Eyeions, who is director

interests of its members...

Eyeions replies on CSA

talks with Inland Revenue

THE Computing Services tween the Computing Services

"The 'high level talks' be- from the Inland Revenue."

Beating staff shortage

I'm sure most programmers do a good job, but then so do the majority of operators. Anyway, I would like to hear your views on

> Don't you think it's all a bit National Analysis of Selecies and Wages, Reward Regional Surveys Mill Street, Stone, Staffs.

the subject of salaries.



Now, I always said that unit had a bug in it!

role of the operations manager. friend's site, by shift managers,

and looked at some of the ways is of considerable importance

courses.

# Contracting can be a good way of making a living

SIGN on for several agencies, sound them to before your current contract ends - and the

operating is not too bad a way of makingali This is the view of a contract operator for years who has "no intention of going being permanent work, unless the demand for cor." tors dries up."

Responding to comments by an exemption was rather critical both of contract open and the agencies (Op Spot, December 2075) said: "The only regret I have is that I didn't ha contracting much sooner. I was in a rufer. over a year at my old installation and just;

That's not to say that tractors don't have then: blems, as he went on sometimes get ill-feelige there are several of them: installation and one s. higher rate than the other

'That happens becau agencies tend to pay beltuto the operators who have on their books the longest: reward for loyalty, I support Agencies are also some

quite recently my moss Then, of course, there

Ideally, staff should be given lack of security. "Yeer," FOLLOWING during their leisure hours. But long contract and be as then again, at some installations week's notice. If the set the operators get so little good permanent operation training that they would gladly doesn't need you any en-

# 'Managers must also look after their own career paths

recent Op Spot (CW, January

10) in which we considered the

in which he should look after his

"WHEN you wrote about the operations manager you didn't mention that he has to look after his own interests. He's got his are still very much the poor as looking after the operators."

Association and the Inland

Revenue to which you refer are

still continuing, but they have

not led to the present situation,

obtaining clarification and pro-

tection for our members (and for

their clients) at a time when

many freelance contractors and non-CSA companies (and their

clients) appear to be in violation

of the strict interpretation of the

1975 Finance Act and could

They get £100 if the new-

comer stays at the installation for

£150 on the completion of one

All unofficial, of course

Seems very enterprising to me.

six months or longer, and anot

suffer from retrospective claims

'On the contrary, we are

as you suggest.

At his installation they have tors to the attention of the short by about 200 a wait shift managers, rather than shift manager. In my experience got it all now, but liables, leaders. They report to the some shift leaders do this ad- while. They blamed to the operations manager who "sits mirably while others do it not at puter, believe it or not" up in his ivory tower." All is not well, however, as

three of the four shift managers time off in lieu to attend courses have a six month or entire do not relate the operators' views and complaints to the operations manager. 'We recently complained about having to attend courses

the company refuses to give us time off in lieu. "The shift managers have told us the courses are for our own good and that we shouldn't 'rock the boat.' When we go on courses it benefits the company as well as us. It's an investment.

in our own free time. You see,

"I suspect they have been given a directive from above and told to keep things quiet in the computer room."

l agree that the operations manager should look after his own interests, and he usually .does, otherwise he wouldn't have the position.

But by caring about the operators - arranging courses and other forms of training, and carrying out stuff appraisals

# Could this M

give up their weekend to go on goodbye. That's what?

The part played by the shift

leaders or, in the case of our

and should not be underrated.

They must bring the best opera-



from only £799 TYPEWRITER TERMINAL

Two machines for the price of one Type-writer style liction feed for single documents, better stc. Pin feed for contin-uous business stationery. Electric typewriter keyboard layout and touch. Left and right hand mergin setting. Crisp, high quality printout. from only £825 TECHTRAN 950

Mass data etorage, high speed retrieval and intelligent data collection. Microprocessor control. 200K character storage per distant et et et etorage per distant et etorage. Switch selectable speeds. Easy file orientated mass data storage. The 951 adds a powerful disc editor, high speed search and editing.

TEXAS 810 from only £995 Compact 150 cps 132 column printer.
Optimised bi-discilonal printing. Adjustable tractor feeds, 3 - 15 inches. 9 x 7 dot matrix.
RE232 Interface. Forms control options.
Dither serial and parallel interface options.
Compressed from control

from only £1392

. . . when you need a dependable supplier, an authorised distributor with a comprehensive range of products at keen prices, backed by large stocks for fast delivery, with full after-sales support. We promise you a rapid response.

TELETYPE 43

Versatile, economic and reliable, 30 cps, senal interface keyboard printer, 132 or 80 columns, 94 ASCS set, 9 x 7 font. Crisp,

ANADEX DP8000 Exceptional value and high rehabity.
84 hres per minute, 112 cps. Parallel and serial interfaces as standard. 96 ASCII set, 9.7 form. Variable tractor. Forms handling leabites. 18 buffer store. Options include 2K extra store IEEE interface.

from only £540 DIGITAL LA34

30 cps desk top terminal Roll feed, paper widths from 3-14 inches. ElA hinerisca 4 setoclable character widths. Full 96 ASCs character set. 7 x8 dor metris. Options include a 20mA interface, tractors to accept aprocket feed paper and nametic herpoid.

from only £859 LEAR SIEGLER ADM-3A The most popular vasual dealings in the world. 1920 character screen expectiv. Cursor addressing. Dual interface. Applica popt. Wide range of speed and world formats. Options include Telscons; 4010

from only £570 LEAR SIEGLER ADM-31 Low cost VDU with two page display and full editing features. Dual interface, 80-8600 baud data rates. Upper/lower case character set. Cursor addressing, dating, protected fields, dual intertally. Optional politing and addressing, printer port.

from only £795

SOUTH

NORTH 01-941-4806 - Harrogate 501263, 4 - Dublin 9523

**IRELAND** 

# your terminator for the 80%



Only System 80 gives you so many feature little cost; plug compatible emulation with BM II. Univac and other major protocols and multi-hoste with each terminal able to communicate with up to different mainframes.

Videcom's System 80 is unique It's also modular, so it can be tailored to your requirements:

And it's British. Made by a company with a reputation for technical innovation and reliability.

Take a couple of minutes now to contact is the details. details - they dould be the most rewarding two spend in the next ten years. VIDECOM

Videcom Limited, Newtown Estate Heney of Oxfortishire RG9 1HG, Tel: (04912) 78423 1881

## 180 days' credit offered by US firm in UK marketing deal COLDATA of Reading has taken on the tary equipment. The company's pre-

ow-cost electronic mail systems. They

will all be sold under the name Genesis

Checking out the galaxies

evolution of the Universe and the galaxies within it is not new. Much of this type has been carried out by IBM researchers at relatively flat are in fact shape.

be attached to the telephone separate acoustically coupled

following a Post Office ruling, have to be evaluated provided

USING computers to simulate the

Yorktown Heights, New York, who have already studied the evolution of spiral galaxies and the formation of the Orion nebula

aronautics and Space Administ-

network via an acoustic coupler

still not yet permitted. A perso-

nal computer with an integral

modem would have to be sub-

mitted to the Post Office com-

plete for assessment of its per-

formance in relation to the net-

In the case of a personal com-

rtists at the National

CW, July 27, 1978).

(not to be confused with the Genesys

UK marketing of a range of US-built peripheral products from Boles and Co of Menio Park, California. Boles can offer Congress to encourage the export of Coldata and other European distributors computer peripherals built by US firms in up to 180 days' credit because of support the \$5 to \$30 million turnover bracket. Boles plans to handle a wide range of products from different manufacturers from the Federal Credit Insurance Association, part of the US Export/ including high resolution graphics. Import bank. The FCIA is similar to the UK's Export Credits Guarantee Departprinters, modems, add-on memory and

ment.

Boles is an export-import company that already deals in wine, food and mili-

## NEWS IN BRIEF **World services** congress

THE second world computing services congress is to be held in San Francisco from June 23 to 25, following the success of the first meeting in Barcelona in 1978. Sessions are planned on hardware and software developments, management, marketing, the legal and financial environment, and staffing.

#### Scots micro study

A STUDY is being carried out by SRI International on behalf of the Scottish Development Agency on the demand for a Scottish Microelectronics Centre. It is hoped that its recommendations will prompt the government into setting up and funding the centre by mid-1980.

## Litigation dropped

National emiconductor's decision earlier this year to drop its PDP-11 emulator, the System 200 (CW, August 2) National and Digital Equipment have agreed to drop all the related litigation over DEC's PDP-11 patents. At the time, National said that it would carry on with the litigation in case it wanted to enter the DEC-compatible market at

# Ski placings

OLIVETTI has become official supplier of data processing services to the International Ski Personal computers can now Federation which has installed a P6060 minicomputer to calculate competitor placings after nearly every ski trial it organises. The previous manual method was to carry out updates three times in but hard-wired connection is that it had been designed to filter

#### Omega factor

CONTROL Data has shipped about 100 IBM compatible computers in the US since 1977. The machines are sold by Control Data as the Omega series and are manufactured by IPL Systems. IPL is expected to announce an agreement with Olivetti under which the latter will sell the IPL computers in Europe (CW, January 3).

## into dentistry

ai computer business with the establishment of Crown Systems Ltd. This company will sell a complete hardware/software package which includes the Diglco Consort 20 minicomputer, and software developed with the help of dentists which records daily transactions and maintains patient records oved into the den-

Burroughs' comms range A RANGE of communications processors has been introduced four separate processing elecby Burroughs in the US. Two ments, each dedicated to a difmodels, the CP 9400 and 9500 are offered at present and they are due for launch in the UK in February.

Including the control of the control

puter to show that some galaxies previously thought to be

relatively flat are in fact shaped like a rugby ball and rotate end-

Our picture shows NASA scientists Bruce Smith (back-ground) and Richard Miller checking out a couple of galaxies.

modem, only the modem would

All equipment to be used with

Viewdata terminals are still

acoustic couplers must still be

the only exception to the bar on

direct connection of equipment

portable, at least in theory.

with an integral modern.

out unwanted signals.

The processors are designed roughs, enables systems to into enable Burroughs computers teract at a much higher level and terminals to communicate than was previously possible. with other manufacturers' The CP 9500 costs \$36,000 and

Tirm aunohes mioro

A MICROCOMPUTER system based on the North Star Horizon and aimed at small businesses, has been launched by Aylesford Computer Systems and Equipment of Aylesford, Kent., a member of the Reed Group. Called the Aquarius, the system is priced at £5,950 and comes and sales ledgers.

Database for UK lawyers

A LEGAL database covering law management consultancy companies to help, the change quotation.

A LEGAL database covering law reported cases back to 1845 will be available on the north star Horizon and aimed at small businesses, has been launched by Aylesford. Computer Systems and Equipment of Aylesford, Kent., a member of the Reed Group. Called the Aquarius, the system is priced at £5,950 and comes are businesses.

B Tirm aunohes mioro

with 48K-bytes of mer. 356K-bytes of floppy with 48K-bytes of mer. 356K-bytes of floppy.

Software includes a disc operating system, Basic interpreter payroll for up to 460 permenter of the Reed Group. Called the Aquarius, the system is priced at £5,950 and comes are businesses.

B Tirm aunohes mioro

with 48K-bytes of mer. 356K-bytes of floppy with 48K-bytes of mer. 356K-bytes of floppy with 48K-bytes of mer. 356K-bytes of floppy of the storage and advance in the system is priced at £5,950 and comes is priced at £5,950 and c

software house of Loughborough). The first four products from Boles being sold by Coldata are an IBM 3741 compatible floppy disc storage system called the and terminal storage devices called the Genesis TSD-4 and TSD-12 that are designed for use with units like the Digital Equipment Model 34 and Teletype Model

porates two 8-inch floppy disc drives built by Shugart that offer two megabytes of storage. The Genesis 21 minidisc will cost Genesis FT02001, a minidisc storage and between £1,500 and £1,700 and comes communications unit called Gensis 21, a low-cost VDU called the Genesis 1210 capacity of 89,600 bytes. The 1210 VDU costs between £500 and £650 while the TSD units are priced at between £400 and £1,000 depending on capacity. The TSD-4 and TSD-12 contain 4K and 12K bytes of RAM and enable data to be formatted and

# Coldata will charge between £2,500 and Philips to reorganise its **UK** operations

Display Terminal Model 7000/ PHILIPS is planning a reorganisation in the UK to take advantage of  ${}^{\downarrow}$ the growing convergence of integrated circuitry used in different products, to enable economical manufacture and maintenance as well as a lower price to the customer.

The phased integration programme for four of its UK divisions will also enable users to deal with a single Philips entity for all their needs in the office automation and business systems field (CW August 16, 1979).

The four divisions involved are Philips Data Systems, Pye

Society Opts

TMC, Pye Business Communications and Philips Business Equipment Division. Integration is expected to be Philips Data Systems sells

small computers, banking and other terminals; Pye TMC sells telephone and telephone exother parts of the Philips group, business viewdata terminal; Philips Business Equipment Division sells its word processing and dictation equipment; and Pve Business Communications sells a PABX, the PFX 8000 as well as intercom and paging

have in their catalogues most of the products which will be required in the automated "office of the future," while Philips is researching further new tech- and processing at the computer be attached to phone network storage which would become available to the UK operation, if PERSONAL computers can now puter being plugged into a

The UK is spearheading Philips' reorganisation to chailenge for the integrated office systems and communication rket because Pye is UK-based and produces some of the key products for the new market.

Hard copy

80 or 132 column

7 x 5 dot matrix 5 dr 8 unit code

\* Paper Tape Reader and Punch

THE Derbyshire Building Society is embarking on a major change equipment to the Post automation programme this Office, other PTTs, and OEM to year, involving upgrade of its mainframe and the installation and also developed the Visa for the first time of banking terminals in its major branches. Beneficiaries of the plan are ICL for the mainframe upgrade and Datasaab for the banking ter-

The society's ICL 1901T is to be replaced with a 2950/10 under DME in March. The terminals The four divisions already will progressively replace an optical mark reading system of data capture which involves counter clerks marking up the forms for subsequent dispatch nologies such as laser disc centre. Telecomputing's TPS monitor will be used.

In the first phase of the programme, D16/10 minicomputers will be installed in four branches in the Derby area, supporting a total of 11 dual cashier counter terminals. In the second, a further processor and local and remote work-station controllers will be installed.

...advance into the 80's

TELEPRINTER ASR

\* Black/red printing

\* Optional pedestal

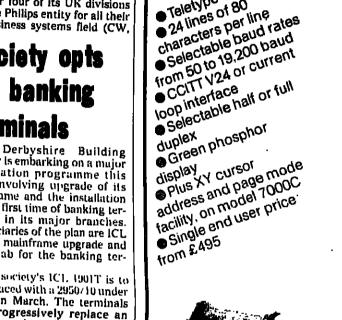
Medam, current loop or telegraph interface

For guale and further details, phone:-Bourne End (06285) 24977 or telex 849408 Trend G.

Trend Communications Limited. PHRONI MARCON

Knavas Beach Baratel Loudwater, High Wycernbe, Bücks HRIO 90Z

with the





pased Visual

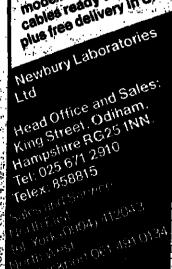
• Teletype compatible

1 24 lines of 80

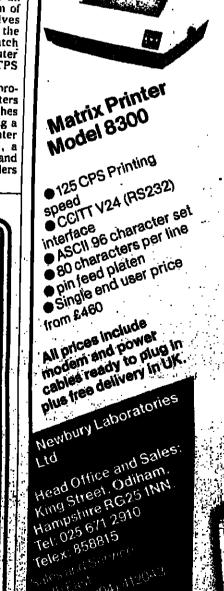
characters per line

1000C

• 125 CPS Printing







# PEOPLE and EVENTS

## Short is youngest master

VIGEL SHORT, 14, became the youngest international master studing the ICL Hastings chees

points. Chass players qualify for the title on winning 7 ½ points. John Nunn, a 24-year-old mathomatics lecturer from Oxford, tied for the £1,000 first prize with Ulf Andersson of Sweden. It was the first British chess victory at Hestings since

1954. Short tied for fifth place efter drawing in 12 moves against the lussian grand master

Peter Haworth, formerly sales director, has now become managing director of X-Data of Slough. He was formerly European sales manager with Memorex. Haworth is succeeded as sales director by Tom Blaszkowlez who joined as sales manager last year and who has now been appointed to the



Bill Hall has been made managing director of Q-Pac Services, where he will report to Dave Teron who is on the international board of Q-Pac responsible for the UK operation. Hall was formerly managing director of ICL India and other positions he has held with ICL include marketing manager for the 2903 in South Africa, and general management of Scotland, North-East, North-West and the Midlands. Recently he has been responsible for forming ICL's new company in Malawi.

Monica Dawson has joined Plessey Microsystems as a sales engineer for standard products. She previously worked for ITT Electronic Systems as a sales engineer in the microprocessor

# European Services

appointed by ECSA, the European Computing Services Association. They are to take up a two-year term from this

ECSA president is Knud Frederiksen of Denmark, the managing director of JDC Data. The newly-elected vicepresident is Jose Diaz Salanova of Spain, managing director of Centro de Calculo de Sabadel The managing director of ORDA B. Tor Mutton of Belgium, becomes ECSA treasurer and

All three new officers have been council members for several years. Frederiksen and Mutton were both founder members of ECSA which this veur celebrates its fifth anniver-

Speaking of their plans for the period ahead, the new officers "There is an on-going tendency to restrict the free flow of data and Signetics."

one of our most important duties to present the industry points of view on the impact of these

John Armstrong and Martin Vandersteen have both been elected to the council of the Management Consultants Association, as chairman and vice-chairman respectively for 1980. Armstrong is managing director of Urwick Orr and chairman of Urwick International, and Vandersteen is a partner in charge of the nanagement consultancy division of Arthur Andersen.

Ray Werner, formerly sales manager for Qume Corp's Western region, has become vicepresident of sales at Vector

John Pallin has become UK sales manager for industrial issued a statement which said, "There is an on-going tendency has formerly worked for Celdis



consultancy

SPICER and Pegler Management Consultants have announced the appointment of Richard Waller as manager in charge of microcomputer consulting activities. He previously worked for CAP Micro Products where he was involved in the development of Microcobol packages and will continue his nvolvement with the Department of Industry microcomputer awareness programme. Waller was the first chairman of the BCS professional panel from

appointed sales manager for the EDP division of BASF UK. He joined the company in 1976 as a nagnetic media and peripheral hardware sales representative for the Midlands, previously working for Nashua as an area

John Toomey, who joined Jo-vian Systems as a senior proate, John Lacey, has joined rammer has been appointed to he board as a director with special responsibility for programming and operations.

Ron Proctor has become. branch manager in Manchester for Univac. He was formerly a sales representative. Dick Gunning has joined the company from Burroughs and has been territory manager for lier shire. He has been in sale! appointed to create a new

Meeting. BCS Fortran specialist group. Heriot-Watt University, Edinburgh. 10.45. Tel: 0533 554455

The use of microcomputers in

electricity distribution. BCS East Anglia branch. Russell Road, Ips-wich. 19.00. Visit to Open University. BCS Bedfordshire branch. Milton Keynes. Apply via secretary. Tel: 01-637 0471.

A look at the new Ansi Cobol standards. BCS North West London

branch. Railway Hotel, 390 Oldfield Lane, Greenford, Middlesex. 19.30.

Technical directions, BCS Bristol branch, St Vincent Rocks Hotel,

Clifton, Bristol, 19.15.

FEBRUARY 14

DIARY

FEBRUARY 4

FEBRUARY 5

FEBRUARY 7

FEBRUARY 12



Jeremy Brittain-Long has b

ITN from the BBC. At ITN Leg

will be concerned with the

application of computer system

generally throughout the wa-

pany with special responsible for the development of the

Colin Parlett has been

appointed an applications or sultant with Tymshare UKE

was previously a sales repress tutive with Burroughs

mechanical engineering gut.

company as a trainee applica

tions consultant and Nik lid

has joined in a similar post

Roy Harris, who has spentire

years with UCC, has now joint

Tymshare as an applicant

Jim Skipper has joined puter Machinery Comp.

two years with Control Da

programmer.

puter graphics.

come marketing manager with Univac. He was formely manager for manufacturing systems, a position which help held since the inception of the BSM division in 1978, Mile Naylor has been appointed tech nicul and customer education manager. He used to be a project manager in the technical opertions department. Chris Long has joined IIN a manager of computer system analysis, a new post where I will report to Paul McKee, IIX1

Peter Harper has been

# Natural language translation. Heriot-Watt University, Grassmar-ket, Edinburgh, 17.30.

I SEE JAPANESE



.. UNLIKE UK PLAN FOR PRINTING IN SCOTLAND T

ON ONE HAND, THE Use of computers in MR weather forecasting. BCS Newcastle branch. Barrass Bridge Refectory, University of Newcastle, Newcastle, 19.00.

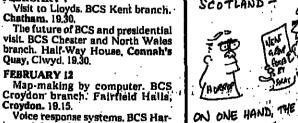
OF COMP Computers in newspapers, BCS North London branch, West Lodge

ON THE OTHER TH OF THE STYMED

Livervare fil

PLANS TO AUTOMATE NEWSPAPERS ARE GOING WELL ...





LAND OF THE RISING SI



You've heard the Dan news m System 38 deliveries...

...now hear the

# dodanews from Wang.

#### THE BAD NEWS

IBM have told thousands of would-be System 38 owners that they were just going to have to wait until next year . . . at the earliest. That leaves thousands of businesses with outmoded, overcrowded systems. But IBM says these people are just going to have to make do until a System 38 becomes available.

#### THE GOOD NEWS

Wang VS virtual storage computer is available NOW. Not a year from now. So you can start solving today's problems today. And with Wang's field-proven RPGII conversion programs you won't sacrifice the programs you've spent years perfecting.

The VS accepts your present RPG programs like a System 3. Along with

COBOL and BASIC. Yet it delivers the interactivity, ease-of-use and programmer productivity no other system can match ... including the System 38.

But Wang's VS is more than just an alternative to a System 38. It's better. The VS grows incrementally as your needs grow. Without swapping out peripherals or rewriting programs. In fact, by the time System 38's start arriving, you could have grown all the way up to a VS 100 supporting up to 128 users with two megabytes main memory, 4.6 billion bytes storage, and a full complement of communications. peripherals, Data Base Management software... even word processing. Not even their 4341 can match that.

Perhaps the best news of all, you can buy a Wang VS today for less than a System 38 will cost you next year,

#### **WANT MORE GOOD NEWS?**

Just fill out the coupon and send it to Wang. Or ring our head office on 01-878 7821. We'll send you the full story on Wang's VS It may be the best news to come across your desk in some time.

Richmond, Surrey TW9 4LU  NAME  COMPANY  ADDITESS  TELEPHONE  WANG	211/2171	K.) Limited	nd Road			
COMPANY ADDRESS TELEPHONE  WANG	N. Carlotte and Carlotte	id, Surrey I WS	1410		1	1
TELEPHONE WANG)	وبالأفالية الإعلام				1.77	
(WANG)	ADDRÉSS					
(WANG)		4.17.18.44.6.2		4.11.2		
(WANG)	TELEPHON					
			A Property of the Control of the Con			
Making the world more productive.			To be the second second second			

# For orders received by 29th FEBRUARY 1980 received by 29th FEBRUARY 1980

SPECIAL PRICE £2,995

**Dual Drive TU 58 based System** 

includes as standard

LSI-11/2 Processor

32 KB Memory 4 Serial Lines (1 utilised for tape interface)

EPROM Bootstrap (2708)

Sockets for further EPROMS

Dual DC100A Cartridge Tapa Drives TVI-912 Visual Display Unit

RT2 -11 Operating System Licence BASIC Software (on DC100A Cartridge),

Licence and Documentation. 2 Spare Cartridge Tapes

The twin certridge tape drives appear to the operating system to be identical to a pair of floppy disc drives, and will run the same software.

#### \* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Wide range of serial interface terminals. Software including MU BASIC, FORTRAN, COBOL, RPL as well as several packages for use in time sharing, communications and commercial environment

SRECIAL PRICES AVAILABLE ON ORDERS PLACED BY 29TH FEBRUARY 1980 - RING FOR DETAILS. LSI-11 MODULES 1. НВ: КОЛУНС, ТО 58 ВВ7 ПХУ21-ВО, МЯУ 11-ВА, НВ281-ВВ, Н9281-ВС. TERMINALS M42, M33, Twin Tape 58

Telephone Belger (9773-82) 6442/5780

Computer Systems + Terminals King Street, Belper, Derby DE5 1PW

S. E. Regional Office. Tel: 01-550 3834

Dual Drive, Double Density, Floppy Disc (RXV21-BD) based system

Dual Double Density Floppy Disc

Will run single density also.

TVI-912 Visual Display Unit

Full RT-11 Operating System

Drives (624K bytes per drive).

Includes as standard

60 KB Memory

4 Seriel Lines

● LSI-11/2 Processor

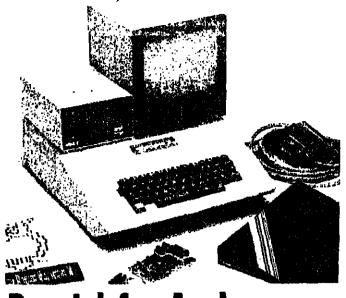
PROM Bootstrag

Have computers any place in the doctor's surgery? ICS Oxford sub-branch, Staff Coffee Lounge, Cxford Polytechnic, Oxford, 19.45. MARCH 27-29

Park Hotel, Cuckfosters, 1945. CAD at Fords BCS Sussex branch. County Hall, Lewes, 19.30.
Computers in the 80s. BCS Hupp-berside branch. Hull Cullege of-Higher Education, Hull. 19.30. The changing balance of man/ technology, IDPM Bournembuth Double 01-688 0171

## MICRO NEWS

by Martin Banks



# Prestel for Apples

veloped by Owl Computers for the capable of storing and executing Apple II has been taken on by downline loaded data and pro-

Microsonse, Apple's master distributor in the UK.

Now being sold under the banner of Appletel, the £595 package allows an Apple temputer to be used both as a direct Prestol ter.

Gowning to use data and protributor in the UK.

It was first demonstrated at the Personal Computer World Show in London last year on the stand of Apple dealer Keen Computers (CW, November 8, 1979).

Flag-waving exercise at the TV-Mex exhibition

and vacant because they had

For those that were there, the

visitors were fairly thin on the

ground, as the overall event is

geared very much to the high

Among those that found the

street home appliances retailer.

show useful was Texas Instru-

ments, giving another UK pre-

launch showing of its 99/4 home

UK product manager for the

system, felt the show had been

successful for attracting and

meeting potential dealers, for

failed to show.

onsequential nature of many nicro applications which have leveloped as a direct result of the all-pervasiveness of the devices could be seen last week at TV-Mex, a subsidiary exhibition to the domestic electrical appli-ances show, IDEA, held at the National Exhibition Centre In

Dedicated to the application of the micro in relation to the TV, the star turns at the show had nothing to do with the sub-

Market leaders in a headcount of the stands were two suppliers of "software" for the burgeoning video cassette market. A non-stop display on a TV was a far more successful draw than scantily-clad ladies lying under solariums in the main hall of IDEA - and they were real.

Some exhibitors were disap- the specialist micro dealers like pointed at the non-appearance of a large contingent of companies from America. Half the exhibition hall was boarded-off aim is to sell the 99/4 through high street white goods and hi fi communications protocols.

> It should be possible, by the small computer scene, Share time the system is officially was also in attendance thou launched next month, to buy UK systems manager Pa specially modified PAL-standard
> TV sets instead of NTSC sence mainly as a flag-wais standard video monitors to use exercise. with the system, and Lunch expects the whole package to be retailing for about £1,000.
>
> He did however him that to the middle of the year, Share would be coming on stream we.

Though he does not see the system as the basis of a small business system, a thermal printer is expected in April, and applications packages and Mike Lunch, the company's a 90K-byte single sided, single version of Pascal that worldensity floppy disc drive in May.

There have also been hints from at the small business make the US that terminal interface and in particular the domination which the company has a total target of 20 in this country. In-

Another recent entranting

"so it is by no means comp."
Another factor against... lishing is that the microbus moves so rapidly anditwo?

out of date by the time that

The questionnaire used? ered the type of package

able, and the document

provided. An interestings.

to this was that the

attempted to use a mice

puter database package w;

Morgan's comment 05

package, an £85 Crome:

database system for running.

team's views on most pick.

"It was very impressive

price but it was not that evel

a Z2D system, sums u

cess the information.

available.

# The new member of the HP3000 family arrives for less than £33,000.

and batch processing, program development, supports RPG, COBOL, SPL, BASIC and and communications to other HP 3000s or an FORTRAN. What's more, files created in one IBM mainframe - at the same time. You can use language can be accessed by applications it as a stand-alone terminal or in a network to written in any of the other languages. monitor what's happening on other systems.

delivery, either.)

correct at time of gring to Prin.

We also kept an eye on the future when we

ing system, the same five languages, the same data base management software, and have the IMAGE, HPs award-winning data base same powerful networking capabilities. So you management system (and its comcan write a program on your central Series III panion inquiry language, QUERY). and run it on your Series 30 at an office across So you can easily get accurate, up-to-the country. Without having to write new soft the minute information whenever its

The new arrival is the Series 30. Although it comes with a small price tag, it's a full-function general purpose HP 3000 computer.

The operating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same aperating system for the HP 3000 is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Executive) - an enhanced version of the same approach is called MPE III (Multiprogramming Execu It has the power to perform transaction—that ran the first HP 3000 back in 1974. MPE—have remote job entry software.)

#### Support for the entire family.

HP does more than just sell computers. First, we help you choose the HP 3000 system that's exactly right for you. We install it, and make sure that it's working up to par. If you Thanks to our Silicon-On-Supphire designed the HP 3000, Expansion paths pro(SOS) technology, you can get all this in a handtect your investment by allowing the computer make sure that its working up to par. If you need help, our phone-in consulting service can some compact package that has an easy onestep start up and a starting price of just

C32277? You won't have a long wait for

always been using.

Carryon investment by anowing mecomputer

put HP engineers at your fingertips to handle
tough, technical questions. And our Customer
Engineers can be available at any time to solve A heritage of compatibility.

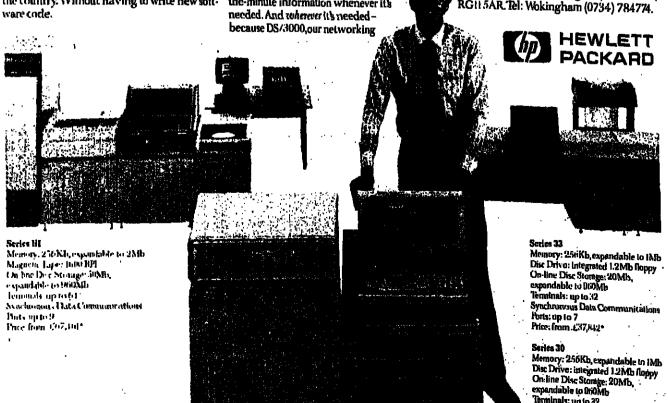
All HP 3000 models use the same operations of the system, the same five languages the same of the same five languages the same operations.

Taking care of business.

We designed the HP 3000 to adapt to the same five languages the same five

All of the models, for example, come with 3000 family of compatible business computers, you can get one now. For further information ring your nearest Hewlett-Packard office or contact Hewlett-Packard Ltd., King Street Lane, Winnersh, Wokingham, Berkshire, RGH 5AR Tel: Wokingham (0734) 784774.

Ports: up to 2 Price: from 1/32,277



# NCC packages list

into the scope and availability of high-level languages and applications packages for microcomputer systems, a team at the National Computing Centre has developed one of the first comprehensive listings of software packages that are available and

The list has developed from a questionnnaire sent by the team to everybody in the country who might be offering applications packages for micros and it now contains details of some 100

According to one of the NCC team, Lyndon Morgan, the list is unlikely to be formally published, though information from it will be available to interested parties via the Centre's Information Service, which will have access to the list.

Alive and well in Chicag

A VERSION of the Pet computer small business syste fitted with a 12-inch screen where such a screen sit offering 80 characters has been seen alive in Chicago, at the Winter Consumer Electronic

Expected to be available in this country by the second quarter of this year (Micro News, January 3), it is likely to form the main stem of the company's continued thrust into the

virtually a necessity. Next month, the comp stages its first exhibition in

Hotel, near London's Heath Airport on February 13 and will be aimed at displaying full range of company app

tions packages to dealers.

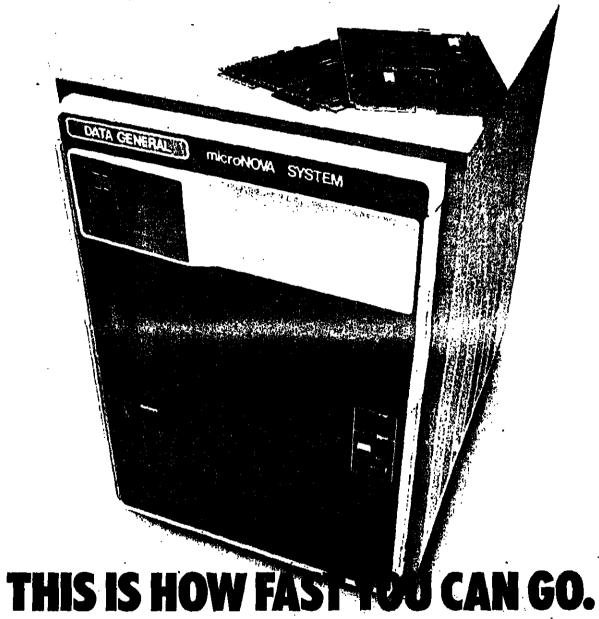
## Make an appointment with London's new Micro Technology Centre

Right in the heart of London, there is a permanent micro exhibition where you can obtain professional advice and buy micro buy micro hardware and software.

Some household micro names are on show: Intel Most Zilog, Apple, Cromemco, North Star, microNova And Peripheral names too: Anadex, Axiom, Lear Siegler, Okidata, Printerm, Sanyo, Trendcom.

This is your invitation to visit the Centre. Unhurisd exhibition crush, discuss your needs in depth, brot books, arrange training and place your Micro system

# ANNOUNCING THE HIGH PERFORMANCE 16-BIT MICROCOMPUTER, MP/200.



Speed and performance. These are the two features that give you the power of a mini in a 16-bit micro-computer. Our new microNOVA® MP/200 is the highest performance microcomputer in the marketplace.

Offering the flexibility of product line integration at multiple levels - board, box or fully packaged system - the MP/200 features fast instruction execution times with an 0.84 microsecond ADD and a full 16-bit hardware multiply in 4.9 microseconds. Standard and high-speed data channel (DMA) provides input/output data rates of up to 3.7M bytes/second. An enhanced NOVA® instruction set featuring byte operations as well as signed and unsigned integer Multiply/Divide add to the MP/200's power.

The MP/200 is completely compatible with the MP/100 which means that all peripherals and inter-faces are

# **Jata General**

OVER 70,000 ARE NOW AT WORK IN 58 COUNTRIES.

interchangeable. And the MP/100 and MP/200 feature the industry's broadest range of compatible field-proven software for program development and execution. Including disc and real-time operating systems and high level languages such as Business BASIC, Extended BASIC and FORTRANIV.

Function and economy. Or, high performance. Whichever your need, you'll find the best, cost-effective answer in the MP/100 or MP/200 16-bit micro/NOVAs from Data General. The right solution for today with the growth for tomorrow. Send the coupon for complete information.

To: Marke	eting Communic House, 724-734	ations, Data London Rd.	General Limit Hounglow Mi	ed, 3rd and 4th ddlesex TW3	Floors, PD
Tel: 01-57	2 7455. 🥳 🐇		1. 1. 2. 3.		
□ Please s	end literature,			d literature and thve phone me	
Name			3 8 8	いきくごえき きじつい	
		1 10 TO 10 T			
of the second of the second		#13570 13540 P.C. 15	The state of the s	30 C 4 C 13 C 1 C 1 C 14	
ation in the state		0.01734000463	0.100 G (\$400 P)	<b>通信等联合 第二次</b> 数	
in the second	registered trademar	diam's a few	141 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Tel	and a superior of the superior



Advertising Kales PHONE 01-261 8757



AVAILABLE MARCH, 1980 **COMBRO COMPUTER BROKERS** 

BURROUGHS

B80

For sale, available Feb.

March, 64kb processor

2mb dual floppies, 180cps printer, Self-Scan.

Ring: 0279 25601

16 WOOLLEY AVENUE, POYNTON, CHESHIRE SK12 1XU Telephone Poynton (09967) 71426 Telex 669181

Computers Bought and

EOB EQUIPMENT Ltd. Tel: 0783 293818

Telex: 537763

**COMPUTERS** BOUGHT **SOLD AND** HIRED

Telephone: DATRONIC LTD: 01-263 3908

WANTED o purchase, all user IBM, TC J. & M. COMPUTERS The Stables, Plains Road Great Totham, Essex Tel. Meldon (0621) 892333

FOR SALE

4 ICL 1971/2 Tape Decks + approx 500 Used 7-track Tapes (mixed 600, 1200, and 2400 loot), 400 used 2400ft. 9-track

**FOR SALE** 

Quine sprint 3/55 printer; unused; all options; parallel inter-

Weybridge (0932) 48346/7

FOR SALE

Systime 1000 (ex-demonstration) comprising: Processor with 64K byte memory,  $2 \times 2.4$  megabyte disc drives,  $1 \times 150$  CPS printer and  $1 \times 150$  CPS printer and  $1 \times 150$  Licensed to use RSTS Version 4.

Ring: B. Rhodes on 0482 445461

**CONTRACT** PERMANENT

We are the Specialists! ANALYSTS PROGRAMMERS OPERATORS VDU/KEY PUNCHOPS DATA CONTROLLERS



PDP 11/04 /34 /60 /70 COMPUTER SYSTEMS Systek

HR House, High Road, orth Finchley, London N12 OAZ Tel: 01-349 2911 Telex: 28227

— CAL COMP

- WANGCO

- DATA GENERAL

- AMPEX

**DIGITAL 310** 

evallable immediately. Four floppy disc drives, one VT50, one printer, based on PDP8. Large quantity of floppy discs, diagnostic discs and games discs also evallable. Presently maintained by DEC under maintenance contract, available either hardware modules separately, complete configuration, or hardware plus some application software, sales ledger, purchases, nominal, wages. Best offer secures total package, £5,000 or best offer for modules. Contact lan Beattle-Edwards, 01-387 9444, Jaffs-lux Limited.

SPECIAL FILTERS FOR CARTRIDGE DISK DRIVES



Card Equipment

ANALYSTS

HAND PUNCHES, REFURBISHED HAND PUNCHES. REPUNDED IN 028-029-059-129 ICL 72 PRINT PUNCHES UNIVAC 1701-1710 VP/VIP ICL & IBM INTERPRETERS ICL & IBM SORTERS
ICL & IBM SORTERS
ICL & IBM REPRODUCERS
DECISION DATA READER PUNCHON LINE TO IBM 380/370
CMC DEC MOS, etc.

Plus, Plus, Plus

MINI & FLOPPY DISCS TOP & FRONT LOAD CARTRIDGES DECISION DATA PRINTERS 120 CPS, 132 COLS UN CAN MAGNETIC TAPE PAPER TAPE TELEPRINTER ROLLS

BUY - SELL - LEASE - RENT -MAINTAIN

Phone: 07062-29125 5 Lines



'AS COMPUTER PARTS ACCESSORIES LTD.

Tower House, College Road Bromley, Kent, England Telephone: 01-464 5895 Telex No. 896559

-- PHONIX

- IOMEC

- NIXDORF

DIABLO/DRI SERIES 20, 30, 43, 44A, 44B.

Qume CIFER digital OK Rohan Computi

Forms Handling

COMPUTER TIME 2903/4 Low Rates

Good availability 01-464 6575 Ext. 176

## **ONE-DAY CONFERENCE**

Tuesday, 26th February, 1980 — London Tara Hotel, W8

**FINANCING YOUR 4300 COMPUTER** - IBM OR PLUG COMPATIBLE? **NEW DIRECTIONS IN COMPUTER FINANCING** 

Subjects covered:

- 4300 Hardware

- 4300 Software, An Early User's Viewpoint

- The Plug Compatible Alternatives

- Acquiring Your New IBM 4300 Computer Lease or Buy, The Taxation Implications

Conference fee: £85 including lunch and documentation.

For further details please contact the organisers.

Organised by: .

EUROPEAN STUDY CONFERENCES LIMITED Kirby House, 31 High Street East Uppingham, Rutland, Leics., LE15 9PY Telephone: (057-282) 2711 Telex: 341352

#### 145 WARDOUR STREET LONDON WIV 3TB Data Storage WEBSTER D/P SERVICES LTD. 129, 029, 026 PRINTING PUNCHES NEW/USED DP EQUIPMENT BUY OR SELL THROUGH (W) DY P PRINTER RIBBONS YOU DESKS A.S.R. 33 TELETIVA NEW DE LUXE 80 COLUMN HAND PUNCHES (EX-STOCK) $(\mathbf{W}) \mathbf{D} \mathbf{P}$

**Vataprinter** 

CIL IBM SYSTEM/34 **MODEL E35** 

C.D.L. COMMERCIAL DATA LTD., Downham Road, Ramaden Heath, Billericay, Ease

**Available April 1980** 

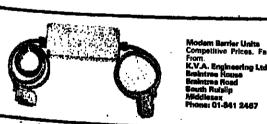
For Sale or Lease 128 K memory

128 mb disk 5211/2 printer, 300 l.p.m. 2x5251/11 display stations

For Further Details

TEL: 0268 710292

Contact Terry Harvey or Hugh Benham COMPUTER INVESTMENTS LIMITED 1 Bentinck Street, London W1M 5RN Jephone: 01-486 8911. Telex No. 922488



HOLBORN

Modern H.Q.

Building

approx.

16,885 sq.f1.

\*PASSENGER LIFT \*CENTRAL HEATING \*REDECORATED

\*OFF STREET LOADING \*Good Floor Loading \*Adj. NCP

£4 per sq. ft.

DE GROOT

COLLIS WE

OB-310 HIGH HOLBORN LONDON WEIV 7LX

01-831 7651

FOR SALE

WEOSTER O/P SERVICES LTD.

IBM 360/44

CPU Model 2044 G, memory 128 Kbyte, 2 disk storage drives (2Mbyte capacity total and 70 ms average seek). Data rate 90 Kbyte/sec. Data Control Unit, model 1827.

For further information please contact:

CERN — STORES/SALVAGE SERVICE **CH — 1211 GENEVA 23** 

OR phone

for technical information: M. H. OVERAS (022) 832667

for commercial information: M. F. SPYSE (022) 832180

OR Telex 23698 CH-CERNLAB

DIRECT DATA MARKETING LTD.

NEW AND REFURBISHED PERIPHERALS

44 HIGH STREET, BRENTWOOD, ESSEX

Telephone Brentwood (0277) 229379 or 243273

\* VP/VIP PUNCH/VERIFIER8

\* BUY. RENT OR LEASE.

CONTACT US:

\* MAINTÉNÁNCE PROVIDED

Contract & Permanent recruitment Total DP Support at its best Programming Operating Data Preparation - Systems Data Control Technical Support

# **OPERATORS** CONTRACT AND PERMANENT

FOR A PROMPT SERVICE PHONE 01-439 6481 NOW

and speak to a top professional in an established company (24-Hour answering Service)

**EFFECTIA GRAVIS** 



EFFECTIA GRAVIS

Pricectical Relice of Warden 2 Print Contributed 66 Warden 2 Print Q1-439 6461 (ONDON WIV 3HP

FOR SALE

Computer Automation Syfa Computer System Comprising of the following:

CA Syla Central Processor. 10MB Disc Systems with Discs. CA Syla VDU.

Centronics 703 180 CPS Metrixprints

All relevant cabinate, hand book, cable, connector, disc and power packs:
 For further details, please phone: Starkman Library Services on
 .01-328 3363.

WILLESDEN, NW10

Computer/ Office Building

45,000 sq. ft. \* Air Conditioning \* Acipie Parking

LEASE FOR SALE/TO LET



18. GB 27. GB 27. GB 27. GB 28. GB 27. GB 2





# COMPANY NEWS

DECCA has finally announced that talks are under way with Racal which could lead to the long-touted takeover bid. The principal obstacle to a Racal bid was almost out of the way last week when agreement was reached for Decca's record business to be sold to the joint music subsidiary of Philips and Siemens, subject

chly to the approval of Decca's shareholders.
At the same time, Decca snowaed helf-year losses to September, 1978 of £3.1 million on tumover of £86.3 million. In the same period last year, it made a profit of £511,000, but for the full year its losses were £5.3 million. li year its losses were £5.3 million.

It is by no means certain that a Recei bid will means that the "For Sale" sign is out; Decca's

measures it took late in the year

quarter to just 1% in the fourth

quarter. It thus reported net

profit for the year down 3.2% at \$3,010 million on turnover up

8.5% to \$22,860 million.

\$21,080 million.

preclude a foreign takeover, but a counter-bid from GEC cannot be ruled out. Racal-Decca appears to have tack government easent but a GEC bid could fell foul of the Monopolies

#### COMMENT

Decca has retained its independence for so long in part because a large proportion of its share capital is non-voting and in part because Sir Edward Lewis, who has guided the group through good times and bad, controls a substantial minority of the votes.

The fact that Descar a problems have to be

resolved by a takeover bid has given rise to som criticism that the City Institutions — insuranc companies, unit trusts, pension funds and trade inions — have once again failed to use the officence their substantisi holdings in companies like Decca give them to press for nanegement and organisational changes before linester strikes and the catestrophe of a

takeover is the only solution.

The progressive eclipse of Decca's records in Top Twenty over the past 10 years should have been enough to signal that the record business was heading for trouble. A takeover may now be the only solution for Decca, and the effective-ness of Recal management is impressive. But it is a pity that more was not done when things

# **Boost for** Burroughs

BURROUGHS stands out among the major manufacturers as currently the only one recording strong profit growth in the fourth quarter. Profit in the final quarter was up 19% at \$132.5 nillion on turnover up 12% at

million during the year, and The rate of profit growth slackened only slightly in the last quarter: for the year profits were up 20% at \$305.5 million on quarter, the company's net pro-fits were \$1,008 million on turn-over up 6.1% to \$6,830 million. turnover up 12% at \$2,800 mil-

# Strong growth for Honeywell

Business conditions deterio- STRONG turnover and profit rated in the second half of 1979, growth have been reported by Honeywell in 1979, with net so these figures contrast with 1978, when the company's net profit up 32% at \$240 million on profit rose 14.5% to \$3,111 million and turnover rose 16% to turnover up 19% at \$4,210 million. Fourth quarter figures indicated a slackening in the rate A major factor in the poor of profit growth with net profit profit performance was the up 10% at \$68.2 million on stendy decline in the value of the turnover up 19% at \$1,230 mil-US dollar during 1979. This

IBM just fails to

IBM just failed to prevent the psychological setback of a fall in a currency factors, IBM's foreign

its year-on-year profits in 1979, operations returned profits but the wide-ranging pricing down 8.5% at \$1,430 million on

reduced the 18% fall in the third lion, 53% of the company's total

prevent profits fall

reduced 1979 profits by \$52 million; a trend in the opposite direction boosted 1978 profits by Chairman and chief executive Ed Spencer warned that the exfirst half of 1979 was likely to

would be down in some quarters of 1980, but overall, the year's results should be modestly

rentals and services rose 8.7% to

\$13,390 million. In the fourth

research and development spen-ding is set at \$275 million.

Honeywell is spending heavily both on capital equipment and research and development. Capital spending is likely to be over \$250 million this year, and

mean that year-on-year profits the research and development

However, Honeywell's computer business also benefits from at \$987.9 million.

expenditure of its 47% owned French affiliate CII-Honeywell Bull, which plans to spend over \$125 million this year. NCR Corp has closed its books

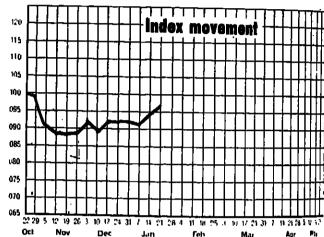
on 1979 with net profit up 21% at \$234.6 million on turnover for the year up 15% at \$3,000 million. By the fourth quarter, the rate

of profit growth had declined to 9%, nevertheless giving the company a record net profit of \$98.4 million on turnover up 16%

## CW SHARES TABLE

					-uet 87,	• • • • • • • • • • • • • • • • • • • •		_		
	9400	landen Stock Exchange	Pe	ince			New York Sinck Exchange	Carp		ı
_ 1	880	Stock	Pice	Change	101	10	Stock	_	_	lł
H-gh	Law		<u> </u>		High	Low	andi	Price	3	I
247 43 74 119 86 805 130 130 130 130 257 67 224 490 216 249 490 219 244 490 219 244 490 219 244 243 244 243 244 243 244 243 244 243 244 244	230 to 14 to 14 to 15 to	Burroughs Chiph Chubh Cole De La Rue EMI Evret Ferrent GEC Honeywell	247 43 4 14 118 66 607 180 67 180 67 72 67 720 67 720 67 720 67 720 67 720 67 720 67 720 67 720 67 720 67 720 74 74 74 74 74 74 74 74 74 74 74 74 74	7 11 14 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	7777 1144 4777144 4777144 4777144 4777144 477714 47	10% 20 20 20 20 20 20 20 20 20 20 20 20 20 2	AM International Ampas Ampas Ampas Ampas Ampas Ampas Ampas Borsagha Computed Sciences Computed Sciences Computed Sciences Computed Sciences Computed Sciences Ampas Research R	145 77 150 150 150 150 150 150 150 150 150 150		. ـ - دراه ۱۰ درسیس برای شهرسه شهرای این این این این این این این این این ا

The table shows the closing prices in London and New York at the end of last week. The index is based on the prices of the UK companies in the table.



# **Merger at Southampton**

SOUTHAMPTON-based Feni both machines are to be in: Data Services has taken over ferred to an IBM 4331 which another Southampton bureau, due soon. According to Fem ! Beresford Computer Services. activities of the two but. Feni operates a Univac 9400 and complement each other. Fr.: Beresford runs a Burroughs member of the Sunlight Sense B2500 but the workloads from Group.

# Question their judgement.



All Ventek computer users were once in the same predicament as vourself.

You have defined the need for a computer system for your company. What it needs to do. How it needs to do it. You're now at the next step.

Amassing a pile of information on computer systems. Checking hardware against hardware, claimed capabilities against actual capabilities. Seeing salesman after salesman. Comparing software costs, installation time, delivery dates. Putting reputations and careers on the line. All to make the best possible decision in buying a computer system to help in the future profitability of your company.

Discover a Shared Aim

Ventek Computers would like you to meet Ventek Computer Users, so that you can quiz them on their prepurchasing decisions, Discover what the computer competition is all about. And most importantly, why there are 1800 installations in the

U.K., including some of the biggest names in industry, and why they went with Ventek.

This is not the time or the place Ventek Computer systems cannot be adequately described in an advertisement. Nor can any responsible business person decided a computer system from a single leaflet or a quick briefing by a salesman.

So take this opportunity to see in yourself why Ventek Computers fit into so many organisations with so much compatibility and so little for

An open invitation to discover our reputation

Take a step now to lessen the uncertainty of one of the mos important buying decisions a company can ever take. Attach the coupon below to your card of letterhead and one of our highly experienced computer sales people will contact you, to arrange a business meeting with Ventek Uses

				<u> </u>		Position		
Compan	· 'y		<u> </u>			- 40,,404		1 6 6 6
Address								
	<u> </u>			: :			100	The second of the second
·			-4 Å, 10	•			The state of the s	
		14.						
Tel No _				CW	4/1/80			
	- 21		reion ( ) eq.				[[בונום]	1-11
T	Ven	ek Lid	, Stat	ión Ho	use. H	arrow Ros	d. Wemble	Middlesex HA

# PERSONAL COMPUTERS

make it work.

# Shake-down coming for small micro systems market

dicate that the small microcomputer systems market in this red to as the personal computer market, will gross at least £43 million this year, compared to around £15 million last year.

Yet despite this enormous growth, about 186%, or perhaps because of it, the business of manufacturing, distributing and supplying these systems to the end user is beginning to show signs of looking shaky.

If only through the application of past experience of other high technology industries, such as the semiconductor business. it is possible to foretell that at some time a great shake-down will occur. The signs are beginning to show that it might well come sooner than later.

The signs are many and various and, while some are fairly obvious, some subtly disguise themselves. Often the signs of trouble even assume the mantle of signs of hope for the future, and not least among these is the rate of growth that the industry is attaining and, therefore, trying to maintain.

An annual growth of 186% from a reasonable base takes some managing. The figure itself is a simplistic extrapolation of figures gleaned from Kit Spencer, general manager of ore in the UK. At the end of last year, he said that Commodore was selling some 1,200 Pets a month, 50% of which were 32K-byte systems.

setting up one for himself is a The remainder was split different matter. equally between 16K- and 8Kayte systems. On top of this, the need for on-going support for ompany was selling some 800 disc drives and printers a month. the customer, once he has stop-Knock off some 20% from the ped being one. That support retail price for the dealer margin should not only cover the and produce a monthly total. maintenance of hardware and Then, believing implicitly in software, but the maintenance Spencer's estimate that Comof the customer himself. modore has 50% of the UK market, double that total. money and if the customer is keen to take advantage of the

Now the market growth rate is high, some might think dangerously so, and runs in multiple figure percentages per a follow-on, paid-for service; or month. So be conservative and grow the total arrived at by 10%, purchase price.

Somewhere out of that lot such support for the customer is comes a figure of £43 million as the size of the UK market in question of being morally bound 1980. The accuracy of that prediction is to some extent irrelevant, but the exercisying with the figures shows up some interesting aspects of the growth rate, and highlights some of the problems the industry faces.

For example, at 10% monthly growth the last month of this year is going to be very nearly as my big as for business as the first three put together. Now, the management of such a growth rate, as well as the funding of it, is a difficult trick, and one that is a difficult trick, and one that not all the participants in the business will be up to.

The financial collapse of the Byte Shop chain is only the most apparent manifestation of the way things may well develop over the next year or two as a result of this growth.

Professional management skills are, perhaps unfortunately for the people who are currently in finding the business a great deal of iun, the most essential prerequiate of actually surviving.

funding is not always the Then it can be set up and pluganswer either, for both parties ged in so that all sorts of wonmust fully understand the drous powers and capabilities requirements of the other to fall magically to hand. Wrong! Maybe now that this new de-

Where high growth indicates cade has got under way, the high potential profits in what small computer industry should looks like a sound, long-term start looking to what is actually business, financial resources are not that difficult to locate. But high, continuing growth rates also mean that "profits" only appear on paper, for they

always disappear to fund that

growth. It therefore often be-

comes very difficult to provide

in real terms, any return to ar

investor on the capital being

Management skills are not the

only problem area for the busi-

ness, for the customers are still

showing little signs of knowing

exactly what they are looking

for, and what to ask for. Many

are still sitting targets for a

salesperson, either good or bad.

And when the customer has

purchased a system, he still has

the problem of what to do with

it, once he is alone with it in his

He understands that this beast

can be of great assistance in

running his business, but even if

he thought he understood

everything the salesperson told

him, he probably is not too sure

of all the details, once left to his

own devices. He will, for example, know

what a database is - the salesperson told him. But actually

This is just one aspect of the

Certainly this is going to cost

benefits of computing, he should

be susceptible to persuasion to cover the cost; either directly as

indirectly as part of the initial

Precisely because the vast

majority of customers and

potential customers do not

understand computers, but

them, then a slice of the growth

potential of the marketplace is

being maintained and will in

There are now sufficient suppliers and dealers around the

future be maintained by word of

country for this to become a

significant element in the choice

of which company a potential

has already been "bitten",

"Don't go to them, they did nothing for me", that (un)blased advice is liable to be taken.

To some extent, it could be

argued that the industry itself has succumbed to its own ad-

vertising and public relations.

image, coming to peneve yes, a computer that does. EVERYTHING can be bought image, coming to believe that

for a nominal sum, packed in a

If he is told by someone who

mouth recommendations.

customer goes to.

understand the need for using

to provide it

little office.

objectives can be met. The newly-formed Computer Retailers Association for forum, defining not only the companies.

objectives, but also organising the means by which they can be course, that the association will rapidly have to become much more than a potential drinking club for the members.

A sense of purpose and direction, with a well controlled and important to it and its customers sharp set of teeth to deal with and how best those defined any recalcitrants, would give the association the means to provide the users and potential users with considerable confidence in example, can provide an ideal both the industry and member

WITH Microsystems 80 to a major shake-down. due to open its doors at the Wembley Conference at where the industry that drag on the companies has created such a suc- supplying the market. cessful exhibition and conference is going, and

BANKS points to some of the pitfalls that could soon and dealers. Not least of these is the apparent boundless success that the industry is having.

colour the business could fact it demands an uncommon amount of financial and business management skills, and could well lead pening.

At the same time, extremely high levels of cus-Centre next week, it is tomer support have to be perhaps pertinent to look maintained, increasing the

It is probable that the industry is approaching the what may lie in store for it. type of crisis already seen In this article, Micro in other high technology News Editor MARTIN industries, such as semiconductors — that is, keeping pace with its own come creeping up on the potential. The opening of unsuspecting suppliers Microsystems 80 maybe comes at a time when the first signs of such a crisis will be apparent.

There are problems for With a growth rate this the industry in terms of coming year that could software as well. As part eventually top 200%, it of this section, Peter might appear that the only Crozier, managing director of Computer-sense, poses possibly be is rosy. But in the question of whether software is the industry's Achilles Heel and looks at some ways to stop it hap-

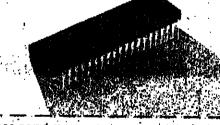
# Microprocessor

A one day symposium by Tektronix February 27th 1980

Due to the tremendous demand and success of our five day Microprocessor Design Aid Workshops. we have decided to present a one day symposium for those people who have only a basic knowledge of Microprocessors. It will be an intensive hard learning day held in the air conditioned luxury of the York Video Theatre at the Heathrow Conference Centre, London It will cost only £40.00 plus VAT which includes a tremendous amount of reference library standard material, lunch, and an informal cocktall gathering at the end of the day.

# Tektronix

Tektronix UK Ltd., PO Box 69, Coldharbour Lane, Harpenden, Herts. AL5 4UP. Tel: Harpenden 63141. Regional Telephone Numbers: Livingston: 32766, Maidenhead: 7321,1, Manchester: 428 0799, Dublin: 508 (32



Please send	ıme	Ď10	jramı	me(s)	) and	٠.
registration	form(s	) for	the s	ympo	muiac	
Name		·	100			

Company

Address:



#### PERSONAL COMPUTERS

about the abundance and cheapness of micro's Achilles Heel. He points to the microcomputer software, or the dearth growing credibility gap between ex- ably the most crucial element in of it. Everything depends on the in- pectations and achievement of implementing a microcomputer sys-

director of software and systems last year, especially for business ad- successful choice of applications soft-

MUCH has been said and written question whether software is the ducing the results expected

With applications software probwidual point of view.

Microcomputer systems, and suggtem, Crozier sets out some rules
eats that few of the systems installed (right) for users that should lead to a

# Why first time users must check software before buying

HEALTH WARNING: COBOLOR PL/I

CAN SERIOUSLY DAMAGE

ganisations and individuals in both government and industry seem to be gripped by a fever — micro fever. Fed by the predictions of the politicians and the propaganda of the popular Press, the "chip" has developed a reputation as the magic solution to a multitude of business. industrial and commercial problems. Hence the current wave of buying fever

evident than at computer exhibitions where the stands of with businessmen fighting to

Probably the most rapidly growing market for the applica-tion of such devices is business administration for small companies. It is also the market sector which can least justify the

has monitored the progress of small business (micro) computers will recognise the growing gulf of credibility between expectations and achieve-

ments. Very few of the microcomputers installed during 1979 are actually producing the results expected by their purchasers. As expectations increase, we may predict that even

our productivity. And it's gone along way towards building

user confidence in our department. It's not every day you

Administrators have been noticeably impressed and they

The main strength is obviously reporting. However, the

comprehensive features allow EASY FRIEVE to be used for

programmes. Development times of 5-15 days with COBOL

English like, completely free format allows both DP and

From £4,500 for small DOS systems to £10,250 for large

According to Datapro, the most widely used and best

3,000 users worldwide - 150 in the UK

Alpha House, Wythenshawe

the vast majority of simple to moderately complex

or PL/I become lash hour  $\sim$  2 days with EASY TRIEVE.

end users to use it effectively within a day.

request some pretty hairy reports. Our programmers

WHAT CAN EASYTRIEVE DO?

HOW EASY IS EASYTRIEVE?

aspirations of their owners. Despite the current wave of euphoria, the microcomputer is fundamentally no different from any other computer. During the last 15 years existing users have acquired considerable experience, the principal lessons of which are now established folklore. Examples of these lessons

1. Application programs. Their

# Ten rules for successful applications software

1. Buy "Here and now" products only.
2. Buy a product which has received its baptism of fire in the hands of substantial and sophisticated computer users.
3. Buy a product which can be modified easily, by the unstituted layman himself whenever his requirements change.
4. Ensure that the product is as foolproof as possible. Specifically

(c) Metter if the programs are run in the wrong sequence.

(c) Metter if the programs are run in the wrong sequence settlers should be an inherent re-run capability.

ies of crucial data files. 5. Buy a product which is simple to operate such that the operate can learn one simple rule which determines the operation of it

pplication programs written by other people or organisations.

8. Buy a product which enables the user to produce special

within one hour's car drive of your office. 10. Remember that the price of the software is a ba

cost only — it is no guide to value.

suitability reliability and maintainability are the most important factors in a successfu

2. User support. Every user needs help. He needs the kind of making errors, which helps clean up the inevitable mess after he has committed a bloomer and which enables him to improve his systems as his needs become more sophisti-

3. Computer equipment of the right power, capacity and reliability is vital but is supordinate to both of the preceding

A new generation of computer buyers has come into existence which has no previous computer experience. Its members have not lived through the struggle of the late Sixties and early Seventies, when the rest of us were trying to get the payroll to work and the sales ledger to balance. They never knew the delights of decimalisation or the traumas of VAT. They have no perception of the effort needed to divert a tailor-made systems. Why? headstrong error-prone user from commercial suicide. They perceive the hardware as being the most important item on the ference between one supplier's only slightly. Soon one significant purchase ledger and another's. or between a "here-and-now'

product and a "future promise". The new generation has little perception of the quantity or quality of support which each the famous dictum - "A" system will ultimately require or of its likely cost.

The consequences of this gap in experience are already becoming apparent. Concerning those microcomputers installed in 1979, there are many cases of dissatisfaction on the part of

because of the non-availability supplier to introduction or unsultability of applications modifications. But 100 modifications. software or hecause of the departure of programming staff.

the equipment to their suppliers or who are in the process of litigation for the return of the equipment.

are expensive. (0) the time (weeks time (weeks time) with it is take time (weeks time) with it is take

3. Users who have accepted a vastly reduced specification of acceptable performance, because of the lack of cause of the l cause of the lack of capacity in either equipment or software.

4. Users who have decided to suspend the implementation of further applications because of to make his system figure to make his system figure.

When the event occurs the user have the where the user have the user have the user have the where the user have the where the user have the where the user have the user has a subject to the user has a subject to the user has a subject to the user has a sub suspend the implementation of reared on audit tralle

sharply growing sales volume. Within two years, 50,000 microcomputers are likely to be a step upon the treadminstalled in the UK to provide pensive data processing. The crucial determination facilities for small to medium-

Each installation will require approximately four application systems (eg order processing. sales ledger, purchase ledger, this respect he colle-payroll and nominal ledger). Than to adopt the Approximately 1.5 application, fuled shown shows

systems will require the programs to be specially tailed his will involve between the and 15 man months of additions work before the systems will k

suitable for the user.
On this basis we may exact new users to consume a total of 25,000 man years of supply during the next two years Six the computer industry is not man-years of experienced it; port during that same pend the suffering may be consider

How often have we not but: the plaintive cry, "All we less some simple packagel si tems"? Almost without eur tion, first-time users seem believe that their requirement are simple and straightforand can easily be resolved low-cost packaged system

In our experience 100% dr first-time microcomputer tomers began by expecting t a cheap packaged system w. sutisfy their requirements? about 90% of them had to insu

Because first-time users so discover that no matter by comprehensive the packs (by conver until standards) a one-day mod tion becomes three month

The new user has not her puter program is never shed." Even if he had he w not believe it. Conseq after his originally packaged) subsequently-tailored syst have been installed he disc that modifications are RO to keep them up to date at 1. Computers which stand idle does he do? He asks his decident to the non-availability of the non-availability of the non-availability. coveries: (a) The mod

> The typical first-time systems can lose design and loperating errors and serious and insorting the plex repercussions. He was plex repercussions and localities with the serious with

out requiring externo ance? Or is he once mere

successful imple microcomputer la recognition of the importance or apple importance or apple ware in his buying this respect he followed the course of the course

# Appointments ointments

COMPUTER WEEKLY, January 24, 1980

Classified Department, Dorset House Stamford St. London SE1 9LU

Box Numbers: Should be addressed to the box number in the advertisement c/o Computer Weekly at the above address.

Clessified Rates: C13 per sccin. 19 x 3 cols = £740, 39 x 3 cols = £1,250 Half Page 119 x 7 cols) = £1,300, 93 x 4 cols = £1,520, Full Page (39 x 7 cols) = £2,000.

Copy Deadline: 3.30 pm Monday prior Thursday publication date. Complete artwork up to 11 pm Tuesday. Advanced

MANCHESTER/GLASGOW

BIRMINGHAM/BRISTOL

contracts set fair... Rates from £270 p.w. **Programmers** IBM DOS/VS CICS/VS COBOL Analyst/Designer IBM DOS/VS DL/1 Analyst

**Programmers** 

**Programmers** 

Programmers

**Programmers** 

Programmers

Designer

Designer

Analyst/Programmers IBM BAL

Insurance Broking IBM OS CICS/VŠ IMS/DB PL/1 IBM OS CICS/VS COBOL **IBM Database** 

IBM OS CICS/VS VTAM DEC PDP-11 RSX11-M CORAL DEC PDP-11 RSX11-M FORTRAN DEC PDP-11 RSX11-M MACRO 11

City C.London City City Berks. Kent Kent Essex Kent City

TELEPHONE Richard Morley at DILOG (01 638 0036)

DILOG LIMITED Throgmorton House 15 Copthall Avenue London EC2M 5TP

professionals seeking professionals

## **COST OF LIVING** RISE NOT ENOUGH?

We do not promise the earth, just interesting appointments throughout the Midlands Area, where housing costs are reasonable, the countryside accessible and the night life great.

We are Project Recruitment Limited, an associate company of Gould Computer Systems in the dead and and are recruitment. Limited, Midlands bred and Midlands based, so we can tell the good jobs from the dead ends. Right now we need bright people with sound programming and/or systems experience for career building appointments with worthwhile employers. Salaries are good — and they go further here, but in return our clients want professionalism

If you think you could meet our requirements contact us immediately.

Project -Recruitment Limited O. P. and Computer Staff Recruitment

To arrange your interview or for other details." contact PETER KEAY on 021-643-6118 retrice hours

Fifth Floor Scale House Holloway Circus Birmingham 1 or 0922,546 16 tevelings . Tel: 021 643 5118/9 (Registered Number 1310172 England): Licence No. M587.

Registered Office

Real Time Process Control c.£7,500+benefits. This vear's beer needs you!

If you have worked with the PDP11 range of machines, micro processor technology, "Media" telemetry and have had industrial experience of software as applied to process control, then you can help our, Brewers at Magor, Gwent, ensure that the beer they produce does reach those parts inaccessible to others.

As the man most concerned in ensuring the control system is operational, you will be in day to day contact with those responsible for beer quality and will therefore contribute to this in no small way yourself.

So if you are a Graduate with both hardware and software experi-ence, male or female and have a healthy curroutly about the mysteries of high volume beer production, we would like to hear from you.

The Company offers an attractive employment package a pleasant working environment, and assistance with relocation expenses.

For future details of the job, and the Company as well as an applicate. tion form, write to Angela Guy Parsonnal Assistant, Whittifead Wales Little The Brevery Magof Gwant

#### **DEC PDP-11 Specialist**

#### Holland

c.£18,000 + CAR

A small, growing computer services company in Holland has an urgent requirement for a Senior Analyst/Programmer - preferably with Team Leading/Project Control experience - to join the company. Initial project will involve sorting out an important customer's problems with RSX-IIM, and thereafter the successful candidate will be expected to help "grow" the company - setting up and running projects etc.

An early start is extremely important – position will particularly suit an entrepreneurial and energetic contractor. Naturally, relocation and assistance with accommodation will be supplied, along with **Contact: Andy Wright** the company car.

## **Programmers and Analysts**

Thames Valley

Salaries Neg.

This company is world-renowned in the development and marketing of Database and TP software. Their Consultancy Division, which is expanding rapidly, have a requirement for good quality Analysis and Programmers to work on a variety of commercial turnkey projects. Flexibility and professionalism are more important than specific hardware/software experience, but commercial systems experience is required. Contact: Bernard Kiernan

#### **X25** Implementation

S. Germany

salaries to DM 90.000

A new communications group is to be established in Germany, by one of Europe's leading Consultancies. To date, the company has specialised in Database/T.P. projects and has scored major successes in the field of innovative and effective design. If you have X25 or similar software European group... challenge of developing a new European group... **Contact: Andy Wright** 

# Head of Tech. Publications

Bedfordshire

We have been retained to recruit a Senior Technical Publications person to run and control a group of up to 20 staff. The Company is a computer manufacturer producing and selling quality products to all sectors of commerce, industry, scientific and military areas. Candidates must be very experienced in either hardware or software with a sound familiarity of total systems. A high degree of management ability is also sought. Contact: Mike Creamer

#### **Program Designer**

London

Our client, one of the world's largest timesharing organisations, has a vacancy for a Program Designer to participate in the design and development of a mini-based commercial system. Candidates should have about four years experience in the design and programming (high level language) of commercial systems, preferably in a minicomputer/communications environment. Experience of systems software would be an advantage.

Contact: Jim Baker

## PDP-11 BASIC+

West Midlands

£5,500 - £7,500

A retail organisation, which is well known in the high street, is seeking a number of PROGRAMMERS with varying lengths of experience to assist in the development and implementation of a range of new commercial systems.

Applicants should have a majmum of 1 year's programming experience on a PDP-11/RST, system using BASIC+.

Contact: Bev Stevens

JAMES BAKER ASSOCIATES. International Personnel Consultants, 32 Savile Row, London W1. Tel: 01-439 9311.

# TOMORROW'S PROGRAMMERS NEED YOUR HELP

Data Training is the country's leading independent training house, providing a range of courses in computer programming and systems analysis for several hundred users throughout the

The computer industry continues to expand. requiring more and more trained people. We must look to the experienced programmers of today to provide the training to fulfil the ever increasing demand for computer

Could you be one of our instructors? Our standards are high. We need people with potential for personal development at our London

Typical 1980 10 weeks' Personal weeks of installation 3 4 weeks' on site 4 weeks' holiday (plus statutories)

Salary scales £6,500 to £9,500 monthly and annual

Teleptor 01-404544 Ouring to hours 9am 4; + late 1.4 Thurstok Sai 9am-br Interviews cara

Training Centre West

not expecting to fr fully experience

cturers, but wear

programmers. 1 -

ı minimumoftı:

years practize:

experience ...

nave the ability

We will train your.

you the opportunit

to become one of

need a willingness:

stretch your own pole:

Success will prove this aworth it

career shared with colleague:

high standing and well respect:

Telephone 01-404 5444 or wat:

Data Training Ltd. 7 9 Nowids: Holborn, London, 60

team of dedg:

our methods and a

Iraining

7 9 Norwich Street, Holborn, London EC4. Tel: 01-404 5444

Join up with JET and Culham

Culharn Laboratory is the United Kingdom Atomic Energy Authority centre for reserving into fusion and JET, the large European fusion project is sited here.

We have vacancies for Programmers (men and women) to work in JET's Power Supply is Division on the coding of complex electrical problems for numerical solution debugging and running the resultant programs on a variety of computers, and preparing the resultant output for analysis. The successful applicant would be interested and the control of t updating and improving codes and preparing new ones. Most of the coding with carried out in appropriate high level languages, mainly FORTRAN.

Applicants should be interested in applications rather than systems programs should have experience in FORTRAN coding of scientific or technical programs Salary in the range £3845-£7210.

■ Housing ■ Banking and shopping facilities on site

Transport from local towns and villages Excellent sports and social facility If you would enjoy the challenge of working on a large, novel experiment, aspecta a multi-disciplinary multi-national team, telephone or write for an application for the challenge of the challe

Culham

Personnel Department
UKAEA Culham Laboratory
Abingdon, Oxon OX14 3DB
Telephone: 0235 21840 ext. 250

#### ADVANCED TECHNOLOGY The Company operates a serisible care structure, Where applicable, generous relocation expenses will be paid. SOFTWARE

£4,900-£9,300 p.a.

Due to continued expansion, our client needs to recruit additional staff to work on military real time software systems.

Ideally, we are seeking people with experience of CDRAL, RTL-2 and/or Assembler – in particular PDP-11 operating systems. However, we would also like to hear from those in the commercial world who feel the

need for a greater technical challenge in work.

Why not discuss the opportunities with re-initially, get in touch with invoffice with a address/telephone number. Alternatively, telephone me, any evening on Burgest Mi 41360.

Peter Dye Associates

# **MYRIAD**

# REAL-TIME DATABASE SYSTEMS ON IBM

**NEAR WINDSOR** 

£5000-£8000

An IBM 370/158 running under MVS with minicomputers in a distributed processing network are installed as the hardware base for the development of a wide range of integrated systems to support our client company's business activities during the 1980s.

The company now plans to expand the project team presently developing a key component of this overall plan—major new Sales Order Processing and Inventory Control systems making extensive use of IMS Database and Real-time techniques on the mainframe. Subsequent phases of this project are to be developed based on both IMS and interactive processing on the mini computers.

#### **SENIOR** ANALYST/PROGRAMMERS

- \* With experience of major commercial systems development.
- \* Knowledge of database and/or real time systems desirable.
- \* To form a key analysis and design
- \* To lead project programming.

# ANALYST/PROGRAMMERS

- ★ With experience of program ★ With a minimum of one year's design and specification.
- ★ Possessing a strong Cobol back-ground ideally IBM. \* To undertake analysis and
- design. ★ To lead a small programming

Salaries offered will be commensurate with experience and benefits include five weeks holiday, flexitime,

subsidised restaurant and sports and social club facilities.

Make a positive career move and contact Myriad Appointments now.

cally advanced environment. ★ With the potential to develop as

★ To develop programs in a techni-

**PROGRAMMERS** 

Cobol, preferably IBM.

analyst/programmers in the future.

REF: NW1/2401

# **NETWORK ENGINEERS**

WATFORD AREA

£6000-£7000

Our client, a successful and prestigious multi-national organisation with extensive computing facilities throughout Europe requires two Network Engineers to join their Telecommunications team based at their central data centre near Watford.

The team is responsible for installing, testing and monitoring telecomms facilities both at the centre and at European operating units will necessitate a certainamount of European travel. We are looking for people with a thorough knowledge of telecommunications and a background in either Computer Operations or installation of modems, multiplexors, etc.

Salaries are negotiable and our client also offers an excellent benefits package with relocation assistance where applicable.

REF: NI/2401

# DOS/VS ASSEMBLER **PROGRAMMERS**

WHERE NEXT? ..... £8-£11,000 + BENEFITS

Programmers, seeking to consolidate their careers within a progressive organisation, will find these positions are technically challenging and offer the opportunity of further career advancement limited only by one's own ability.

Applicants will have either developed application programs in IBM Assembler or gained an in-depth knowledge of the language through systems programming. Knowledge of DOS/VS and related systems software will be a distinct advantage as the company specialises in this operating system.

The current vacancies are to enable the company to meet their ever-increasing objectives and they offer SENIOR PROGRAMMERS and PROJECT LEADERS the opportunity to design and produce advanced systems on the IBM 4300 series. Additionally the installation houses 370 equipment.

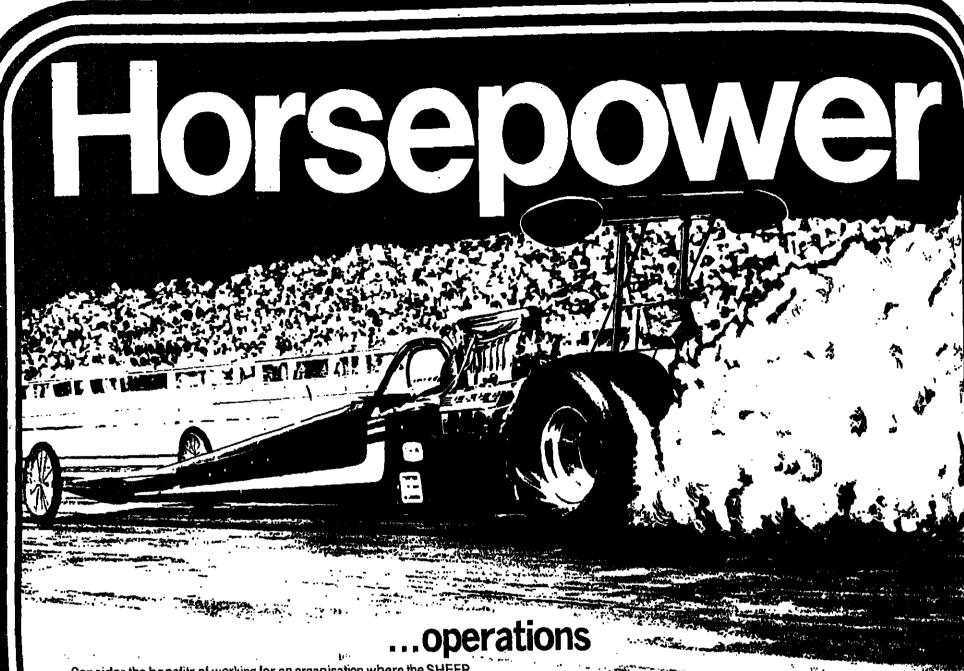
Salaries will be in the range £8,000-£11,000 + benefits, depending upon experience.

The modern offices are situated in attractive countryside within easy reach of London and in addition to an excellent commencing salary the company offers first-class conditions of employment.

REF: \$1/2401

MYRIAD APPOINTMENTS LIMITED 30 Fleet Street London EC4Y IAA Telephone 01-353 0981 24 hours





Consider the benefits of working for an organisation where the SHEER COMPUTING POWER can provide an environment of leading edge technology and an unrivalled range of career opportunities.

The Wellcome Foundation are a worldwide organisation concerned with the research, development, manufacture, sales and distribution of products to promote the health and hygiene of both man and animals. It is a company totally committed to the importance of the D.P. function and where the operational spread of computer activity is country-wide.

Technological advancement is vital in retaining job interest and expansion in computer operations is paramount to career development. The current configuration comprises twin IBM 3031's operating under VM/370 and OS/VS1. Communications equipment includes local and remote VDU's, typewriter terminals and RJE facilities spread throughout the U.K. One machine is dedicated to providing IMS scheduled services, while the other provides timesharing facilities under VM/CMS.

Without doubt, the installation will become one of the most advanced in the country with operations management dedicated to improving all

To develop these services still further, it is now intended TO INTRODUCE A THIRD SHIFT and recruit operations professionals with the following

SHIFT MANAGER-starting salary £8,000 - £10,000 inc.

It is unlikely that those with less than five years' IBM 370 operations experience will have the qualities necessary for this demanding role. You will be expected to demonstrate a thorough knowledge of OS/VS1. IMS and JCL together with the management skills required to manage a shift. Experience of VM/370 and Communications would be a distinct advantage. This opportunity should be viewed as an outstanding career move.

SENIOR OPERATORS—starting salary £6,000-£7,000 inc. Applicants should have at least two years' IBM 370 experience and a good knowledge of OS/VS1 operating systems. Familiarity with IMS and VM/370 would be a distinct advantage. Also, maturity and reliability will be considered as essential qualities for these positions.

OPERATORS - starting salary £5,000 - £6,000 inc.

These opportunities are ideal for those who have at least one years involvement with OS/VS1 in a large IBM 370 environment. It will probably be your first career move in the industry and will present an outstanding prospect in terms of job satisfaction and technological

The Wellcome Foundation provide what is possibly the most comprehensive training and career development programme operations staff are likely to find in the industry.

Management are aware of the need to provide alternative career paths and can offer opportunities to move into Production Support, Network Control and a variety of new operational areas. You will be expected to spend some time training in all aspects of these departments.

Starting salaries are highly competitive and additional company benefits

- IDEAL LOCATION. DARTFORD, KENT provides easy access from London, Kent, Essex and areas of Surrey and Sussex.
- OUTSTANDING RELOCATION PACKAGE. Without doubt the best in the industry
- **EXCELLENT OPERATOR FACILITIES.** Free food, relaxation area, cooking facilities.
- '4 WEEKS + 3 DAYS HOLIDAY.
- SPORTS & SOCIAL FACILITIES. Includes Licensed Club.

In the first instance telephone us to discuss the situation in more detail and to arrange immediate appointments for interview. These can be held in London or Kent. If you have difficulty in phoning, simply clip the coupon and you will receive all relevant information. We can provide a comprehensive "People Package" brochure that will describe in depth the advan tages of joining The Wellcome Foundation.



# D.P. RECRUITMENT LTD.

7 SWALLOW STREET, LONDON W1R 7HD. 01-434 2042 (24 HOUR ANSAPHONE).

# MYRIAD

#### **CONSIDER A CAREER IN RECRUITMENT**

LONDON

SENIOR £9,000-£12,000 JUNIOR £6,000-£8,000

Myraid is a well established and leading Recruitment Consultancy which has achieved an outstanding record of growth during the seventies. We are now seeking additional Recruitment Consultants at both Senior and Junior levels.

Applicants should be interested in business matters and keen to develop management skills in a position offering job satisfaction and high rewards. Dealing with people developing professional relationships and understanding client requirements is a major aspect of the work, necessitating good personal communication skills and offering involvement in a wide range of computing issues.

Successful candidates will be under 35, well educated with computer experience gained in programming, analysis or any sales oriented position. An awareness of business gained in a Contract role would be particularly relevant and a desire to progress with the Company coupled with the ability to work on one's own initiative is of prime importance.

If you are interested in considering a career in recruitment and would like to learn more about these challenging positions and the training available, please telephone to arrange a meeting to discuss the matter in

REF: AW1/2401

MYRIAD APPOINTMENTS LIMITED Fleet St London EC4Y IAA Tel 01-353 0981 24 hrs

# 1980 Graduates

# Management Consultancy

London Based

c.£4700 International initially

The Management Consultancy wing of a worldwide Chartered Accountancy firm are seeking several graduates in Computer Science or similar to join their Systems Development Group this summer.

You will be trained and gain experience in all aspects of programming and design within a group dealing with computer and systems selection and evaluation, design and efficiency reviews.

The role is both demanding and rewarding offering opportunities to move into management consulting positions and to travel widely overseas.

Contact Yvonne Warren quoting ref. YW 3011 for more



CONTRACT VACANCIES IN THE MIDLANDS AND SOUTH FREELANCE PROGRAMMERS & ANALYSTS

COMPETITIVE RATES
INTERESTING ABBIGNMENTS
REGISTER NOW WITH THE SPECIALISTS
PHONE 021-043 E118 (24 Hours) to register or savid your evy, got
PROJECT REGISTMENT LIMITED
Fitch Ploor, Scale House, Holloway Circuit
Birmingham B1 120 Lineari No. 1887

#### **BOX Nos.**

Travel

# JBA

# Highly Qualified PL/1 An/Prog.

An international company is engaged in considerable development work on a massive IBM network incorporating six IBM 370/138's, four IBM 3033's, and an IBM 3031, with complete SNA throughout Europe, Built into each host computer is a database system handling management and marketing

Required is a very experienced Analyst/Programmer or Programmer with plenty of PL/1 and a sound background of CICS, TOTAL systems. Essential that appointee is highly qualified. Initial project. (marketing statistics) duration is for a minimum of 1 year. **Contact: Mike Crea** Contact: Mike Creamer

#### **PDP11 Field Engineers**

#### Köln and Frankfurt

Our client is a U.K. based company who have developed a highly efficient order-processing system based on PDP11 equipment. Several systems are being installed in Europe and Field Engineers are required to carry out installation and subsequent maintenance services.

Appointees will be expected to spend one or two months in the U.K. on a familiarisation course followed by German based assignments for about 18 months. Thereafter, projects could be elsewhere in Europe/World or back in Contact: Mike Creamer

# **Dutch-Speaking Analysts**

The largest independent systems/software house in the World, has several slots for Dutch speaking Analyst/Designers with experience of real-time,

mini-based project development. Career prospects are superb – leading to Projects Management and above. European wide since the company has a presence in several Continental countries. Full relocation and good, large company benefits are available.

#### COBOL/RPG2 ---- COBOL Con.

Frankfurt, Germany

Complex re-programming job to be carried out from IBM 370 and Series 3 hardware – programmes in both COBOL and RPG2 – to HONEYWELL L64 COBOL. Programmers with both COBOL and RPG2 experience would be ideal, although extensive experience in either will be considered. Also a slot for an RPG2 specialist. Contact: Andy Wright

#### **Computer Manager**

c. £8,000

A major manufacturer of products for the motor industry is seeking a COMPUTER MANAGER to be responsible for the implementation and management of a new system based on HP3000 hardware. Applicants should have a professional attitude and sound technical ability combined with experience of commercial and manufacturing systems.

#### **Analyst/Programmers**

#### South Coast

This 'blue-chip' computer services company is looking for highly motivated personnel capable of fitting into a fast moving and varied commercial environment. Successful candidates can expect an appropriate induction and training period tied to an identified career development plan. The computing environment is typically IBM and includes DB/DC, and integrated, interactive batch systems.

Contact: Margaret Steven Contact: Margaret Stevens

# **Applications Packages**

neg. to £7,500 + bonus

Our clients are specialists in the development and marketing of General Accounting and Payroll packages. The current requirement is for competent Programmer/Analysts with COBOL experience on any machine, to work in both development and support activities. Candidates must be able to work to high standards, unsupervised. There is some client contact, and a minimal amount of travel.

Very nice environment – benefits include a very good bonus scheme and non-contributory perision scheme.

Contact: Bernard Kiernan non-contributory pension scheme.

## **APL Programmers**

#### West of England

up to \$7.000

Our client, an international computer services organisation, has vacancies for APL Programmers to work on the development of commercial systems on micros. Candidates should have two years APL experience, preferably in an accounting financial environment and the ability to bandle client problems. Above average salaries and benefits.

Cantact: Jim Baker.

> JAMES BAKER ASSOCIATES, International Personnel Consultants. 32 Savile Row, London WL Tel: 01-439 9311.



**JBA** 

# Analyst/Programmers

# (2+years experience) to work on Computer Network Systems Development

London Area

Start circa £7,500 - £9,500

Our client is currently developing some of the most advanced computer networks yet seen in Europe. The technology involved includes real-time systems, communications, graphics, output, on both large mainframes and mini-computers.

Positions have become available for Analyst/Programmers - or Programmers with some good design experience – to join these teams. Experience sought is non-specific in terms of languages or machines but candidates must have worked in an environment in which at least one of the above types of systems had been developed — and should possess a thorough understanding of the system. In general terms, IBM, UNIVAC, HONEYWELL or ICL 2900 experience is useful together with ASSEMBLER, COBOL or PL 1.

These are excellent career opportunities with a company which is growing in the UK at a tremendous rate, and which can offer a wide range of opportunities on the Continent at a later date - if so desired by individual employees.

Benefits package includes:-Interest-free season ticket loans; Luncheon vouchers; BUPA; Disability and Accident Insurance; Pension Scheme; Car Scheme.

> Please contact either:-**Peter Murley on 01-437 3043** or Andy Wright on 01-439 9311

JAMES BAKER ASSOCIATES, International Personnel Consultants, 32 Savile Row, London W1. Tel: 01-439 9311.

**BLUE CHIP** SEMICONDUCTOR.

National Semiconductor have recently announced their intention to expand their U.K. resources.

Today there is a decided demand for our products — an everexpanding interest that has resulted in very real opportunities in marketing and customer support. We are looking for more National Naturals to work from

> MICRO PROCESSOR SYSTEMS SPECIALISTS

have two years electronic design

experience or semiconductor sales

experience, genuine enthusiasm

our Sales and Marketing office in

prepared to offer candidates much

Bedford. And naturally, we are

**FIELD SALES** 

**ENGINEERS** 

Applicants should be educated to degree standard and have experience of both hardware and software development... I ne successiul applicants will be involved in products with real potential and challenging customer projects.

All the above posts have a company car as part of the

**INTERNAL SALES** ENGINEER

The successful applicant will liaise both with our distributors and general customers - advising them on all pricing and commercial enquiries while assisting the Distribution Manager with distributor monitoring and administration. Ideally, applicants should be educated to HNC, Graduale or equivalent level in Electronics.

OFFICE MANAGER

The successful applicant will supervise the General Office and control of our Data Centre together with the efficient operating of office services. You will essentially, have proven Ideally, but not essentially, you will have a degree or attained HNC experience in Data Processing/System Analysis... and experience of office standard. More essentially you will

The above vacancies — open to male and female applicants command very competitive salaries, financial fringe benefits and a very real interest in a new and and appropriate training.

If you are genuinely interested in building a career with a Technological World Leader write or telephone us right away. Today!

Colin Wemyss, U.K. Sales Manager, National Semiconductor (UK) Ltd., 301 Harpur Centre, Horne Lane, Bedford MK40 1TR. Tel: 0234 47147.



National Semiconductor Toby of National Important

# Develop your career and our new installation

Local Government is big business. The London Borough of Havering has carried out a comprehensive review of its computing strategy and has established a new in-house computer service dedicated to the introduction of advanced and efficient computer systems This will replace the current 'bureau' service operation. A substantial expansion of the Borough's use of computers is planned and a comprehensive systems strategy is being formulated

A Honeywell Level 66 DPS44 with 2 megabytes of main memory and A Honeywest Level to DFS44 with 2 megabytes of main memory and using Time Sharing, Transaction Processing and On-line Query and Reporting Facilities is on order for delivery in July. DMIV Data Management System, IDS II Data Base System and Cobol 74 will be used. A front end Network Processor will control terminals situated

Applications are accordingly invited for the following new posts in the Chief Executive's Department (Central Support Group):-

SYSTEMS DEVELOPMENT MANAGER PROJECT LEADERS SYSTEMS ANALYSTS SENIOR PROGRAMMERS PROGRAMMERS

DEVELOPMENT

**PROGRAMMER** 

With specific experience and ability with DEC LSI-11 and/or Z80 or INTEL 8080

We are a small company, manufacturing

a special purpose are composition ter-

minal used world wide by the printing/ graphics art industry — based around a DEC LSI-11. We also produce intelligent peripherals using DEC LSI-11 and ZILOG Z80 microprocessors.

This position offers scope for personal

and USA), combined with the satisfac-

tion of working for a small closely knit

Please write or telephone for an application form to: Miss Lorraine Theobaid, Xenotron Ltd., Vinces Road, Diss, Norfolk iP22 3HH. Telephone (0379) 4611/2.

ASSISTANT LECTURER OR COLLEGE LECTURER

company situated in a very pleasar

pment and foreign travel (Europe

£6,500-£8,500

£11,000

The successful applicants will be appointed to appropriate National Joint Council salary scales which in the case of the Systems Development Manager will be within Principal Officer Range 2 and the remaining posts from AP4 to Principal Officer Range 2 and London Weighting allowance and Comparability award pending). For Programmers a good working knowledge of COBOL is preferred but COBOL training will be given to Programmers experienced in other languages.

Relocation and removal expenses may be considered. Generous holidays. Offices in Romford Town Centre, close to main line Railway station, within easy reach of the Essex countryside.

> Application forms and further particulars from Computer Project Team, Town Hall, Romford, Essex. Tel: Romford 46040 Ext. 368/9.



MICROPROCESSOR FACILITY

LECTURER n the Micropioueson Forthly which has been set up to provide teaching exper itse in microprocessors for all depart ments in the University

Candidates for the post elicuid have experience in microprocessor applications and proferably knowledge to electronics and microprocessor hard ware. The successful candidate will be required to assets in the building to specialised microprocessor-based systems. The appointment will cammence an or before the 1st September 1980 Salary scale £4,786-£9,891 (undersview).

eleres should be submitted by 18 sebruary to the Socretary, University the string, from whom furths articulars may be obtained.

# **Stewart Wrightson BUSINESS + SYSTEMS ANALYSTS**

City and South West London £7,500 to £9,000 + benefits

Our clients are a major city insurance broker with substantial interests both in the UK and overseas. They are currently developing a range of new systems to support their worldwide business activities. A number of these systems will be on-line terminal based using satellite minis linked to an existing IBM mainframe.

To assist in these major projects the company is seeking to recruit experienced Business and Systems Analysts who have the ability to develop distributed processing systems from feasibility through to implementation.

Candidates must have at least two years sound experience in systems analysis, programming or O & M preferably, though not essentially, in a commercial environment. A knowledge of Insurance/finance, mini computers or on-line systems would be an advantage.

As these positions will require a considerable amount of user contact at all levels, successful candidates must be able to communicate well.

These are responsible positions within an established department and provide the opportunity for rapid progression to Senior Analyst and Project Leader

In addition to these excellent career prospects and involvement in new areas of applications and equipment using the latest techniques, the company offers the following range of benefits:

O Non-contributory pension scheme O Subsidised restaurant

O Season ticket loans O Employee share scheme

O Luncheon Vouchers O Sports and Social club

To apply for these positions please contact Yvonne Warren quoting reference YW 2917.



123, New Bond Street London WIYOHR 01-408 1670

#### CONTROL **ENQUIRY ASSISTANT**

Salary: £4806-£5259 p.a.

in July, 1979 we installed an ICL 2960 and in July, 1980 we will install an ICL 2972. 1900 system at present running under George II. We will be running both VMEB and DME Operating Systems on the new machines. The successful applicant will work with a small business and specific with all of within a small busy team dealing with all of the Council's computer applications. He/she will also be expected to assist in the conversion of these applications to the VMEB operating system.

We offer generous annual leave, a subsidied stelf restaurant and are close to trains, tubes and buses. Assistance with relocation expenses, if appropriate will be

As part of Lambeth's Equal Opportunities Policy, applications are welcome from people regardless of disability, marital status, race of

Application forms available from the Recruitment Section, Directorate of Management Services, London Borough of Lambeth, 18 Brixton Hill, London SW2, Telephone: 01-274 7722 Ext. 3008/9, Closing date Sth February 1980.

**AMBETH** 

# applications programmer

Here at C.S.S. we now need a highly competent Programmer to take full responsibility for the maintenance of the operating and application soft-ware on a recently implemented Honeywell Level 6/43 installation Current applications include: accounting, personnel records and PERT, although the success-ful applicant will be expected to control and contribute to the

development and implementa tion of new application software for a variety of projects.

Although age is no parrier pre-vious experience of COBOL and

Salary negotiable: Manchester based

FORTRAN would be a distinct advantage lf vou would like more détails. please phone Ray Miles on 061-969 5535, reverse charges or write to him at: General Site Services Ltd. Nelson House: Park Road Timperley, Altrincham WA14, SAE

955

#### **UK CONTRACTS** - S. COAST IBM BAL DOS VENTEK DATASHARE - MIDDX. HONEYWELL L62 + COBOL - BERKS. HONEYWELL FORTRAK – ESSEX - ESSEX HONEYWELL 6060 COBOL D.G. NOVA + BASIC — SUSSEX (Feb. Start) PDP BASIC + II/RMS - BERKS. APPLE PASCAL -N. LONDON PDP CORAL/RSXN – KENT ICL COBOL VME/B - C. LONDON LEEDS, BERKS. IBM COBOL OS/VS - BEDFORDSHIRE IBM IMS DB/OC + COBOL – KENT IBM OS COBOL - C. LONDON (March Start) **OVERSEAS** CII 10870 - W. GERMANY DG ECLIPSE FORTRAN - FRANCE IBM A/P PL1/BAL - W. GERMANY (Long Contract) IBM COBOL IMS DB/DC (Long Contract) Call Neil, Colin or Denise for

# **Opportunities for Operators**

MAKE YOUR

WINNING MOVE

OS JCL WRITERS

TERMINAL OPS

ICL 2904 EXEC 2

February start. Long term contract. Interesti conversion project. £200 + per week. Ring Jane Asbury or Sharn Poll now!!

Various contracts available. Long and short term bookings. Call Rachel Martin or Sharn Poll now.

IBM 370 OS VS1 OPS London Area

Preferable with VM experience. Immediate start Minimum 1 month. Ring Sharn Poll or Rachel Martin.

Worceste

All Areas

SHIFT LEADER

Co expanding from IBM 370 to 4341 soon. DOS/POWER VS. 2 shift system. Excellent perks. Salary: £6,250+neg.

**OPERATOR** London E.C.4 ICL 2904 installation currently require an Operator Minimum I year's experience. 3 shifts Salary: £5,750 neg. p.a.

SENIOR OPERATOR London E.C.1.

Univac 90/40 — OS4 installation. Min. 2 years experience. 2 shifts. Good prospects. Salary: £5.000 + 12% a/a p a.

OPS/SHIFT LEADERS Varied operations staff reqd. for ICL 2903/2905 installation. Exec. & JCL. 3 shifts Salaries: £4 to £6,000 neg. p.a.

OPERATOR Minimum 1 year a IBM experience DOS VSE POWER Split day shift to 8 p.m. J.C.L. knowledge prof. Salary £5,000 a.e. February start. Long term contract, Top rates + expenses. For further details call Jane Asbury or Rachel Martin now

BURROUGHS London Area Burroughs operators (verious machines) reqd. Days only. Top rates. Call Sharn Poll or Rachel Martin.

For lurther details of the above vacancies and other permanant opportunities phone June Moga

Knight Computer Services Ltd., ୍ୟ ହେଶ .

# **Programmers**

The Rutherford Laboratory's Computing Division supports scientific research in the Laboratory and at Universities.
Facilities include dual 360-195s, 3032, PRIME 400, GEC 4070 and VAX 11 780 computers with a large network of work-stations in

Research supported includes CAD, electron beam lithography for silicon fabrication, lasers, astronomy, space research, nuclear physics and

Career opportunities exist for graduates with a good degree and an

Communications. Development of both local area and packet switching networks.

**Graphics Programmers** particularly for work in colour raster graphics.

Unix Programmer to support a research programme in distributed computing systems.

These posts offer excellent prospects for candidates with the right

qualifications and experience. Salaries range from about £3,500 to £7,000, depending on age, qualifications and experience, and will be awarded in the grades of Scientific Officer, Higher Scientific Officer and Research Associates. The Laboratory has its own restaurant and sports facilities nearby. We offer excellent working conditions including a local transport service, generous holidays, sick leave allowance and non-contributory

For an application form, please write to: Jane Griffiths, Personnel Group, Rutherford & Appleton Laboratories, Chilton, Didcot, OXON OX110QX quoting Ref: VN 882 or 'phone (0235) 21900 Ext. 510.

Closing date: February 8th 1980.

c. £8,000

#### or North East SENIOR SYSTEMS ANALYST

The Client

Birmingham

Part of a major U.K. quoted group with world-wide interests A leader in its sector of the industrial chemical market, with a

consistent profit record. Reporting to a project manager, with responsibility for the design and development of on-line data base systems that will integrate from order processing through to production control using a newly installed IBM 4300.

The Candidate

A data processing professional with a good track record of designing and implementing on-line systems. Prospects for career development are good.

The post could be located in the North East or Girmingham, and the base may be influenced by the successful applicant's current location. Assistance will be provided with the current location. provided with relocation expenses.

Résumés, which will be acknowledged and forwarded to our client unless securing letter gives contrary instructions, to E. H. Simpson, Executive Selection Division, Ref. SC638 at the address below.

COOPERS & LYBRAND ASSOCIATES LTD

Management Consultants Shelley House, Noble Street, London, EC2V 7DQ.

ANALYST/ **PROGRAMMER** 

SIX WEEKS: HOLIDAY EXCELLENT SPORTS FACILITIES, ETC

The Data Processing Section of the University a Computing Unit has a vactory for an analysi/programmer. Duties include organamum, leating and implementation of new systems; the maintenance of susting systems; and participation in analysis and de-sign.

Applicants should gralerably have at lass; two years' programming asperience (Cobel or similar), but expenses in panticlar applications, or with particular computers, is lead important than the general qualities of adaptability, sali-mytivation and an ability to communicate.

To arrange an informal interview, place Jalephone Gulldford 71 281, stenator 470. Each of application, in the torm of a detailed confrontum vise, siquid be indirected to the Date Property Grice, Companing Unit, University of Surray, Gulldford, Surray, GU 2001.



F.M.S. is a recently formed Anglo-Aust Software House specialising in Applications part ages and Services related to IBM GSD equipment

SERVICES

LIMITED

A sound knowledge of IBM RPG 11 is essented We have vacancies for SALESMEN CONSULTANTS

PROGRAMMERS If you are prepared to travel, work had intelled looking for a rewarding career in the consultant field contact:

John Porter, Fountain Management Gerick Ltd., Fountain Court Steelhouse 12/12/18 Birmingham 84 SDY of telephone 52/12/18

# CHIEF SYSTEMS ANALYST **NEW POST CIRCA £11,000 CENTRAL LONDON**

THE COMPANY: We are a major publishing business. situated in Central London with some provincial sub-

THE JOB: This is a new post reporting to the director in charge carrying responsibility for complex commercial real time systems now nearing completion, as well as responsibility for recruiting and leading an in-house team of high calibre computer staff who will develop and implement systems for the '80s.'

THE PERSON: For this senior post we need someone, probably over 35, with the background and maturity to communicate at all levels within the Group, to work on current systems and make a significant contribution to the formulation of our plans for the further development of computer-based systems. You will need the commitment and enthusiasm to meet the demands of a busy publishing environment with unusual working hours where necessary, and the experience to motivate staff. You will have been responsible for the design and implementation of at least one major real time system. Data General experience would be advantageous.

THE OPPORTUNITIES: Possibilities for advancement are excellent. Significant success in the current post, coupled with the training and development we can provide should result in rapid progression for the individual with ambi-

THE REWARDS: Salary around £11,000. Six weeks' holiday. Pension scheme. Company medical service. Very good sickness benefit.

Candidates should apply in writing giving details of age, experience and qualifications to Box No. 1074, Computer Weekly, Dorset House, Stamford Street, London

PERSONAL CONTROL AND LICENSIS OF THE PROPERTY OF THE PROPERTY

THE NATIONAL INSTITUTE OF HIGHER EDUCATION, LIMERICK, IRELAND

#### SYSTEMS ANALYST/ PROGRAMMER

The Computer Centre provides a wide range of computing and data processing services on PDP11/70 and ICL2904 equipment. As a result of an expansion of its activities, the centre is seaking a Systems Analysi/Programmer to fill a permanent

The successful candidate will advise and easist academic and other departments in identifying their computing requirements and will develop and support the software to meet them. Candidates should be competent Analyst / Programmers and angineering applications. Experience in an academic computer came, while desirable, is less important than the ability to supervision.

SALARY SOALE: £6220-£7135 p.a. Application forms, available from the Personnet Office, The National Institute of Higher Education, Limerick should be completed and returned by 15 February, 1980.

UMIST LECTURER IN SYSTEMS ANALYSIS

REF. COM/275/BC, the Department of Computation is an expending department with one of the largest Horour Schools in the country. The graduate output is highly sought after by sidustry. The Department is reasonably well equipped, having two MOD-ONE computers, eight PDP11/03.dom. outer and one 1/38 for research the Department else makes good use of the Regional Center's targe COC 7600 and CREER 72 computers. vecimes exhib for a lecturer in Symme ma Analysis and Data Processing

Applicants should have had previous professional experience in an appropriate anytoment. previous teaching experience is not examined. The gelary scale is: 14333-18892 per sinus funds feveral.

Annual hydroid (avel)
Acquisite for application forms and dirtier particulars quoting the above rainings about to the Registrary Likest P.O. Box 88, Marchestar Appl 1002 by the Straining Appl 1002 by the Straining Appl 1002 by the Straining 1880

Recruitment



in informatics

# S/W Development Expert

Greater London, Salary: £13.5K + benefits

opportunity for a Data Processing professional to enhance his/her career with one of the world's leading Consultancies and Systems Suppliers. The company has recently formed a new Mini Computer division and now wishes to appoint a Software orientated Project Manager who will report directly to the Divisional Manager. The successful candidate ideally should be aged 28-35 years with at least one degree in a numerate subject or alternatively, substantial "hands-on" experience in the following areas (in order of importance):—Basic Software Development, Compilers and Operating Systems, Multi-Processing

This position represents a rare and outstanding techniques and real-time communications/networking. A proven ability to act in both pre sales and customer support roles is a decided advantage as are personal communication skills. Besides a well above average salary which reflects the prominence our clients place in meeting this requirement, the company offers a comprehensive range of benefits and allowances including a fully paid company car. It is envisaged that the appointment will be taken up in February/March 1980. Applications should be speedily despatched to Logistix Ltd. who will conduct first interviews ten days after the appearance of this advertisement. Ref: 24/1/A

# Mini+Micro Software

#### Challenging opportunities in Holland

This highly regarded Systems Consultancy Group is. in its areas of specialisation, the acknowledged market leader in Holland. If you consider yourself ready for a career step that will probably give you ample technical & promotional potential to take you through the 80's then this is your next move. Openings exist at various levels of seniority in the areas of Mini & Micro Systems. Communications, Message Switching, Process Control, Real-Time Banking and Distributed processing. 2-6 years Assembler

background is essential and a degree in a numerale subject is desirable. You will be working in a technically professional environment offering both Independence and complete responsibility for defining and executing demanding projects. You will be based in one of Holland's principal cities where superior housing is readily available and recreational/educational facilities plentiful. You will be close to Germany France and Belgium not to mention England just 45 minutes away. In addition to a significant salary reflecting local conditions and full removal expenses you will also receive: Initial accommodation allowance, Assistance with house purchase, 4 weeks holiday + 8% bonus, Settling-in allowance, Medical insurance and Pension scheme.

Salaries in the range £11-16K

# **Technical Authors**

W. Europe, Salary: c. £12K + benefits

major European based Multi-National Computer Manufacturer has an immediate requirement for Technical Authors. Sultable applicants will have either designed and written user documentation for any Data Systems Software product or alternatively have an indepth data processing background in one or more of the following areas: Systems Analysis, Commercial Applications, Data Communications or Programming and, of course, a desire to progress into the area of Technical Authorship. Successful candidates will work in a multi-disciplinary team to prepare integrated training and documentation packages in English for world-wide use, covering the company at latest

hardware/software products and methodology. Any necessary job related training will be provided and there will be ample opportunity for promotion and world-wide travel if desired. Preference will be given to graduate candidates aged 25 to 35 years with two to five years relevant experience. In addition to an excellent salary, company benefits will include a tax free relocation and housing allowance, a very good health scheme and a language course for the employee and his family, interviews will be held at our client's European office throughout February.

# **Broking Consortium**

City of London, Salaries: to £10K

A multi-national insurance & Broking Institution with substantial world-wide assets is prepared to exceed the current market rate for top calibre personnel to work within its expanding Management Services Department besigners and Analysts will be engaged in projects at the early atages of development. Designers and Analysts will have been involved in feasibility studies, project control, implementation and live numbing. The MVS. Currently, the Company is seeking Applications Programmers, Systems Designers and Financial medical benefits after a brief qualifying period of among year's COBOL or PL-1 experience preferably in an on-line and Data-Base environment. Knowledge of Ref. 24/1/D

Logistix, 360 Oxford St. London W1N 9HA



# AMERICAN MANUFACTURER needs Sales Executives to make a wise move 8K base, 14K on-target + Car

CIANGLAN ARMICTET ERRATEN EN ELEMENTE EL MELLE EN MELLE TROCCISIO INVICIONAL EN EN MELLE CATALLE CATALLE CATAL

Based in Slough, our Client is an American "FORTUNE 500" Company with a turnover approaching 1 billion dollars. They develop, manufacture and support advanced technology computer systems to serve worldwide industry, commerce and science. Dedicated to product excellence their name is synonymous with quality and reliability. Their prime asset is the people within the Company who work together towards the same goal, to be the best.

OEM Sales Executive, Herts., Bucks., Midlands, Oxfordshive.

With full backing and structured support you will be part of a select team of sales people who enjoy the high earnings and security in the exhilarating environment of this American Manufacturer.

Ideal candidates will have been successfully selling micro processors, mini computers or related products to end users or OEMs, and together with management inclinations should be eager to prove themselves in this dynamic Company.

Full, impressive presentation and training facilities exist and the opportunities are genuinely outstanding.

It would be a wise move, at least to investigate the situation by telephoning SIMON I EVER ON: 021-236 3781 (24 hour answering service)
OR: 021-420 1574 (evenings and weekends)
Please write to me at my Birmingham Office if you prefer.
Interviews to be held in London or Birmingham.



London 01-935 8671 3 Mendeville Place, Wigmore Street, London WIM 5LB Birmingham 021-236 3781 35-37 Great Charles Street, Queensway, Birmingham B3 3JY Manchester 061-833 0427 Blackfriars House, The Parsonage, Manchester M3 2JA

**感激を表 Specialist Computer Recruitment Ltd**。



Hardware Continued expansion, our client is seeking an additional Assistant Hardware Controller to join a professional team. The team is responsible for the smooth running of all hardware, both internally and externally and is expected to keep abreast of the latest technological developments relating to mainframe and communications equipment.

If you are currently a senior operator with about 2 years IBM experience on sound Hardware appreciation, are ambitious, able to work on your own initiative and can liaise with users and suppliers, at all levels, this could be an ideal move for you. An extremely social shift rota, 8 a.m.—4 p.m. and noon—8 p.m. Monday to Friday is in operation.

Operator c.25,500 + mortgage subsidy with service.
Outstanding opportunity for those with 18 months or more IBM DOS/VS experience who currently feel cramped by the lack of formal training and standards and where their current management show little or no interest in providing additional career opportunities. 3 shift system covers 24 hours, Monday to Friday.

The company is located in modern offices in the City of London. Fringe benefits are excellent and include non-contributory pension, interest free season ticket loans, active Sports and Social Club, L.V.'s, cheap personal loans, 4 weeks holiday and paid overtime.

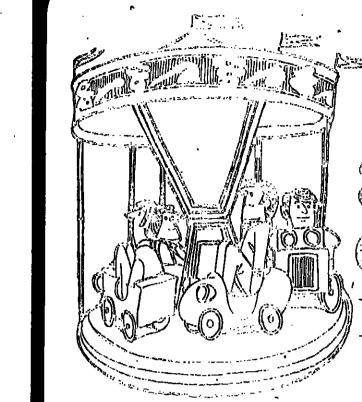
London's Commodity Market



# D. P. RECRUITMENT LIMITED

7 SWALLOW STREET, LONDON W1R 7HD TEL: 01-437 2042 (24 HOUR ANSAPHONE)

101-437 2042 (24 HOUR ANSAPHONE)



Shop gonus

an chrehed in chrehes

conne to us for a contract

in the North & Midhands

# ANALYSITY PROGRAMMMIN

UNIVAC 9030/RPGII. Commercial applications. 6 month contract in the Midlands. Immediate start. c£250

# TEVARAL SECOND

IDS/TDS experience desirable. Commercial applications. Midlands location. Immediate start. c£260

#### 期間,強國聯 實際企業等人工和內容(1)。

VMEB and COBOL. Structured programming. North West location. 6 months + contract. Immediate start.

#### SENIOR PROGRAMMER

For Database Team. IBM/PL1/COBOL and DL1 experience is essential. Midlands location. Immediate start.

c£26

#### SENIOR ANALYST

Required. HP3000 experience. COBOL and IMAGE desirable. Midlands location. Commercial applications. Immediate start. c£275

# IBM 370 DOS/VS PROGRAMMERS COBOL or ASSEMBLER

Command level CICS and structured programming experience essential. North West locations. Long and short term contracts. Immediate start. c£250

#### ICL 1500 CDE/VTL and/or ASSEMBLER, SYSTEMS DESIGNERS and ANALYST/ PROGRAMMERS

Various locations. Long and short term contracts. Immediate start. c£260

# SENIOR PROGRAMMERS

Good MINI EXPERIENCE desirable. Commercial FORTRAN essential. North West location. 3 months' contract. Immediate start. c£250

#### SENIOR ANALYST/ PROGRAMMER

IMS DB/DC and PL1 essential. Order Processing. Midlands location. 6 month + contract. Immediate start.

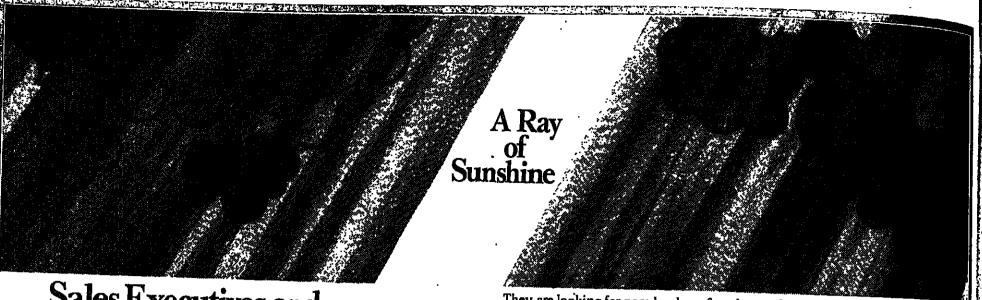
061-833 9341

6th FLOOR, ADAMSON HOUSE, MARKET PLACE MANCHESTER, M3



# Knight Programming Support Linite Computer Computer Consultants

London • Manchester • Birmingham • France • Holland



Sales Executives and Trainee Sales People

For a number of years our Client has successfully designed, manufactured, marketed and supported advanced computer systems that are installed in thousands of Companies worldwide and a substantial investment in new products maintains their position as one of the top computer manusacturers with more than just an eye on the future.

**LONDON & THE SOUTH** 

They are looking for people who, after thorough training will be selling factory control systems to the subsidiaries of the Company's major accounts, you therefore need an understanding of the principles of stock and production control, plus an awareness of the financial implications derived from their

You may have been selling mini computer systems for at least a year, or are a sales orientated Systems Analyst with extensive customer contact experience. Either way you need to be a professional person with a desire to succeed in this highly challenging environment. As one would expect, full Managerial & Technical Support is readily available.

Extensive sales, product and applications training is provided to give you the earliest possible opportunity of enjoying high earnings and career progression with this professional and expanding Company. There is an attractive, negotiable basic salary, realistic on-target earnings; so if you think it's about time the sun shone on you for a change,

elephone SIMON LEVER, Senior Consultant, ON 021-236 3781 (24 hour answering service) OR 021-420 1574 (evenings and weekends) If you prefer write to me at my Birmingham Office. Your application will be treated in the strictest confidence.



London 01-935 0671 3 Mandeville Place, Wigmore Street, London WIM 5LB Birmingham 021-236 3781 35-37 Great Charles Street, Queensway, Birmingham B3 3JY Manchester 061-833 0427 Blackfriers House, The Parsonage, Manchester M3 2JA

Specialist Computer Recruitment Ltd

contracts for operators: **CoOperators** OCC Contracts Personnel

SHIFT LEADER £6,000

OPERATORS £5,500

ICL OPS £5,000+

IBM OPS £5,000

CHRIB CAIN on 01-237 8423/4 Ins-Right Limited, Premier House, 120 Souths

INTERNATIONAL RECRUITMENT CONSULTANTS

RECRUITMENT CONSULTANTS

**Paris** SENIOR ANALYST PROGRAMMER COBOL. DL1 & Structured Programming

DATABASE DESIGNER
Evaluation & Design of Database
systems. Experience could include

Middle East, ANALYST PROGRAMMERS COBOL, PLI & IMS ideal for this major DB/DC development project Excellent tax free package

Yorkshire c£375 SENIOR SYSTEMS ANALYSTS

Yorkshire C£280 ANALYST PROGRAMMERS with CICS/COBOL. DL.) useful.

K./Holland to c£400 AICRO/COMMS, SYSTEMS

**新** 

projects in various locations,

Hants/Wilts C£2:
PROJECT ENGINEERS-HARDWARE
Activities will include hardware
solection. Configuring. Procurement,
Installation, testing. Maintenance and
customer, hasen on medium to
large Mini-based Turn-Key Projects.
Mini nxp. ossen. Long Contract option.

Applications for other positions an always welcome from candidates interested in contract appointments. For further detells, please contact Roger Allington, quoting Ref. FL19 OCC Contracts Personnel i Shootersway Park

Herts. HP4 3NX erkhamsted 2299 (day/avening). For full details of all our contract assignments

Ring CoOperators today on 01-836 8411

ANALYST/PROG. COMPUTECH 01-794 02

**MORTGAGE WORRIES?** VANTAGE OF LOWER HOUSING COSIS PROGRAMMERS £6,500+

RELOCATE TO THE WEST COUNTRY OUR CLIENT. A MAJOR COMPUTER USER, REQUIRES ADDITIONAL STAFF TO PARTICIPATE IN EXCITING DEVELOPMENT WORK WITHIN AN EXPANDING DEPARTMENT. PROGRAMMERS £6,500+

Programming Team Leader, £6,500-£7,000 Responsible to the Project Leader. The successful condida Programmers and essist in system testing. Analyst/Programmers, £6,500-£7,000

Senior Programmers/Programmers, £5,000-£6,000 Responsible to the Programming Team Leader and must be capable of y



Project
Recruitment
of for other details.

Limited
contact PETER KEAY
of 00 322 54616 consults

Registered Number 13 0 172 England: Likeurs by 18

**MANAGEMENT & EXECUTIVE SELECTION** 

telephone 01-637 9611

Whether you're a bright young programmer or a senior analyst ...

# CHANGE DIRECTION HERE FOR A REAL CAREER . . .

# A rare opportunity to move into CONSULTANCY

Expansion has led to more openings at consultancy level in the London office of CSS International, a major timesharing company. We are looking for people wishing to build a career in consultancy.

Vacancies exist at a number of levels. If you are interested in joining a small friendly team of professionals,

then this is an exceptional opportunity. We will give you the chance to consolidate your DP knowledge and to gain expertise in new areas.

# **OPENINGS AT**

- ★ Database design and programming
- \* Interactive on-line systems
- \* Lots of customer contact
- ★ Plenty of variety
- \* Work in VICTORIA, S.W.1

\* Possibility of trips to the U.S.A

Interested? Ring Terry Bate on 01-637 9611 or 01-670 7985 evenings and weekend

# OPERATIONS OPPORTUNITIES in OXFORD ICL 1904S GIII and DEC PDP 11/70

## Do you have

Sound technical background Management potential

# We can offer

Interesting work **Excellent training and** prospects. Friendly working environment. **SENIOR OPERATORS** starting salary

DATA CONTROL **ASSISTANT MANAGER** 

Some supervisory experience essential. Data control experience an advantage.

£6644\* rising to £8098\* (by 6 annual increments)

£4,204\* rising to £5088\*

£4240 rising to £5537 (by 7 annual increments)

Please ring Terry Bate

on 01-637 9611 for more details or 01-670 7985 (evenings and weekend)

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT& EXECUTIVE SELECTION



# **Business Planning Analysts** Computers...expanding in the 80's

In today's stark economic climate, the growth potential for the Computer Industry is still assured as both industry and commerce increasingly realise the benefits that computers bring.

In Honeywell, the role of the Business Planning Analyst is to formulate pricing plans, business plans and marketing policies and strategies for a complete range of equipment and services, covering the short term and

Opportunities exist for graduates, possessing at least two years business planning and forecasting experience (three or four years for the more Senior Post) ideally gained within the computer industry. Numerate people without a for-mal qualification will also be considered.

Those appointed will gain valuable experience in the integrated world wide planning activities of a major

The salary and benefits package is excellent and the future career prospects

outstanding. Write with career details or telephone for further information and an application form to: Sue Morris. Honeywell Information Systems Ltd., Honeywell House, Great West Road, Brentford, Middlesex TW9 9DH. Telephone: 01-568 9191.

# Honeywell

# COBOL

A now position exists with the Group Management Services Department of Crane Fruelrauf, Europes loading manufacturer of trailers and ancillary equipment for the road transport industry

Following the recent installation of a Honoywell Level 6:43 (192K with mass storage) to run comple and central he and balch jubs, we are seeking to recruit a

the vacancy is for an experienced Programmer, as the duties will involve a wide range of commercial applications, including the redesign of systems currently running on Bureaux as well as on-line development of purlant new applications

leporting directly to the Management Services tanager you will join the central team (primarily ystems related) at the very beginning of a major inhouse computer development programme: A challenging position offering wide job variety and good careor

The position is based in Dereham, an attractive Norfolk The position is tased in Dereham, an attractive Norfolk market town offering reasonably priced housing, in close proximity to Norwich, the coast and the Broads. In addition to the above salary, other benefits include a lwice yearly productivity bonus and, where appropriate, realistic assistance with relocation costs. Please write giving full details or telephone for an application form to

E. V. O'Sullivan, Assistant Group Personnel Manager, Crane Fruehauf Ltd., Norwich Road, Dereham, Norfolk Telephone, Dereham (0362) 3934



air wingate

Crane Fruehauf

#### THE INSTITUTE OF OCEANOGRAPHIC SCIENCES

#### DATA SCIENTIST/ PROGRAMMER

MARINE INFORMATION AND ADVISORY SERVICE

MIAS is the UK national oceanographic data centre and has a responsibility to acquire information and high quality data and to make them available in the most useful format to industry. research workers and government departments. It supports a computerised date bank and actively participates in internatioanographic data exchange.

There is a vacancy in the small team of oceanographers and programmers who develop and operate the bank, on the floneywell Level 66 computer at Bidston. The work is varied and includes both data/information processing and the development of software systems based on modern computing

A degree or equivalent in an appropriate subject. Candidate for Higher Scientific Officer should have at least two years' post graduate experience for those with an honoura degree or five years' experience for those with HNC/HND Salary and Conditions of Service

The selery will be within the following scale Scientific Officer £3591-£5486 pa. 20 days paid annual teave Higher Scientific Officer £5097-£6737 p.a 22 days paid annual leave

Starting pay according to age, qualifications and experience.
There is a non-contributory pension scheme.
The Natural Environment Research Council is not a Govern-

ment Department but conditions of service are similar to those of the Civil Service.

Further details and application forms from:
Miss J. Philipotts
Institute of Oceanographic Sciences
Bidston Obervatory
Birkenhed L43 7RA (Tel: 051-653 8633)

NATURAL ENVIRONMENT RESEARCH COUNCIL

#### **ENGINEERING SPECIAL**

AIR WINGATE LIMITED

Hull

Barks.

PROGRAMMER/ANALYST CHALLENGING DEVELOPMENT PROGRAMME

Air Wingate Limited is a last moving, mojor international film of air freight forwarders based in Ascot with branches at 12 key locations around the U.K. Air Wingate ore ombarking on an embitious development plan to provide on aims computer facilities on Ventek Ustapoint 6650 equipment initially in their Head Office in Ascot, but later to be extended to the branches. Due to the accope of the planned system and internal promotion, the following vacancy easts.

#### PROGRAMMER/ANALYST

Significant usperiume (dealty on Datepoint) is required together with a very positive attitude to systems development. Responsibilities will include both programming and analysis work.

Are product 22-78 -- Salery circa 06,000 plus BUPA and other benefits.

Applications stating personal details and experience to .--

Mrs. 8. Greenway, Personnel Department Air Wingste Limbed Wingste House, High Street Ascot, Berke. Tel. Ascot 23484

s. rougon	Service Superviser	£8,000 + Bonus + Car
N. London	Supervisor Minis, Maintrames	
Berks./W. Lond	da	£8,000 + 6aı
	H/W Support. Chance to Progr	
:/W Midlands London Manchester:	Field Bervine Minis Tech. Support Minis or Comms.	£8,000 + G/T + Gar £7,300 + G/T + Gar
Matgow, London,	Reid Service P.O.P. Bonus	£8,000 + 0/T + Car
Herts./Bads. Hrmingham	Field Service Minis Commu. Field Service Minis	£8,000 + 0/T + Car £6,500 + 0/T + Car
S. London		W/ ( T VAI

Reid Service Minis/Mainfrage E6,180 + O/T + Car field Service Photolypezottlag C8,000 + 0/T + Car Manchest Interestional H/W Support E7,500 + Car international Field Service

£7,000 + 0/seas Allowand 5/C London . Best Minis Mandisclurer £9.560 + 0/T + Car Field Service Misia/Comma. 28,000 + G/T + Cur

This selection offers top career apportunities with training in U.K., U.S.A. or Europe to smaltlous Field Engineers, Call today Consultants, Ref. KJW 2056.

Ring Ray Kelly for further details on 01-ABEXECUTIVE (KINGSTON) LTD: 01-549-6441 261;8016.

# There's going to be some brand new programmes on the screen

Our client, a major engineering design company, is rewriting all it's computer business systems. That's an exciting prospect for any programmer who has the experience and ability to cope with the responsibility for this task.

It means working, with the minimum of supervision, on an in-house computer, as part of a permanent small team that will build up a reservoir of expertise on these systems. Training will be given on the on-line transaction processing system. If you want to develop a career within a top company - this is your chance.

You'll need to have had 2 to 3 years' recent experience in cobol programming. ideally, you'll be in your 20's, settled in the Surrey/Sussex area, and highly

The company offer a competitive salary and wide range of benefits, including excellent staff restaurant and club bar, active sports and social club and a good

# **You could put them there**

Please write, naming companies to which we should not forward your application, auoting ref. no. 19, to Sandra Wren, Royds Personnel Services, 8, Hinde Street,

# Find your place in British Gas

#### SYSTEMS MANAGER (DESIGNATE) UP TO £12,260 p.a.

Our Altrincham based Computer Services Department is looking for someone with proven experience in Systems Management to co-ordinate the Systems and Programming effort involved in developing our planned systems expansion

Our installation is currently in a transitional stage from ICL 470s to a dual 2972 configuration controlling a large and expanding communications network. We have eloped a wide range of systems and in the near future see ourselves incressing the use of teleprocessing and moving more firmly into such areas as data base management and information systems. As Systems Manager you will, therefore. occupy a key role in leading a team whose job it is to identify potential areas of

You should have a degree or relevant professional qualification together with formal systems and management training.

In return for your expertise we offer a first-class employment package which includes generous removal expensos (whore appropriate), 28 days holiday a year. good sports and social facilities, excellent ponsion scheme, free personal insurence and a starting salary within the range £10,492-£12,260 p.a.

If you are looking for a secure future in an industry of achievement, and feel that you meet our requirements then telephone for an application form and return it quoting reference 8677 / R not leter than 4th February 1980, to:

Director of Person North West Gas Weimen House Altrincham WA16 8AE.

**CLASSIFIED** 

<u>COPY</u>

All classified copy

should reach our offices

no later than 3.30 p.m.

on the Monday pre-

ceding Thursday's

if complete artwork is

supplied, 11 a.m. on a

NORTH WEST GAS

CHELSEA COLLEGE

## A SENIOR COMPUTER OPERATOR

The Centre operates a new Herris 125 interactive me access computer with 24 ports under the vitted operating system. This system will be upgraded out the computer two years to replace the existing Eliott A130 me.

A responsible and well educated person is sought was a maximum of 'O' level Maths, and English and preletally technical background. The post should also specific technicians with mature experience of laboratory comparison and electronics as an elternative is maintenance.

Conditions of appointment include a live day help weeks holiday, plus one week at both Christmer and Barlincuding the Bank Holidays, two shift working one p.m.) and selary up to 55423 p.s. inclusive Interviews by arrangement with Scorpery (made Centre, Chelies Gollege, Fullem Bissiper SWS. Tel: 01:736 1244:

# **MANAGEMENT & EXECUTIVE SELECTION**

telephone 01-637 9611

# What's in a £10K name?

Consultant? **Project Leader?** YOU will be based in WEST

DPM?

Titles don't make the man in this industry - it's you that really counts - especially if you work for this small dynamic systems group specialising in on-line real-time systems for the Travel Industry.

We require a CONSULT-ANT to effectively act as **DPM** to several clients - not only recognising their problems, but knowing the solution or designing it from scratch.

LONDON and can expect an attractive salary package of circa

# Cobol Programmers c.£7K

for the on-line Reservations System. If you're good, we'll offer a package of circa £7K. If you've only a little experience, but have enthusiasm and the aptitude to learn then we'd still like to talk with

Reserve the time to ring Terry Bate on 01-637 9611 or 01-670 7985 evenings and weekends

# **CROYDON to £11K** Systems and **Programming Manager**

Younger, but experienced professional with drive and ambition to help us into the 80s. Minis, networks. Information processing planned.

# NORTH LONDON to £8 ½ K+

**Project Leaders and** 

COBOL or BASIC type language for mini/micro manufacturer, in a commercial support environment.

**Analyst Programmers** 

# NORTH KENT to £8K+ **PL1 Programmers** and Systems Programmer **Analysts**

OS or DOS background. Exceptional Benefits package including Relocation.

# **WEST LONDON**

c. £9 ½ K

# **Team Leader and** Systems Analyst

For lively team working on wide variety of database projects. On-line working, intelligent terminals.

If your job isn't here then phone Terry Bate or Derek Pearson for a discussion

Suite 201/6 Albany House 324 Regent Street London WIR 5AA 01-637 9611

MANAGEMENT& EXECUTIVE SELECTION



# SHARE IN THIS SUCCESS AND MARCOL'S OTHER GLITTERING PRIZES!

# CII-HB set to oust ICL at Space Agency

ICL LOOKS likely to lose out to CII-HB on contracts from the European Space Agency to replace two ICL System 4/72s. Software house Marcol of London is set to win a substantial consolation prize for the UK computer industry in the shape of a £250,000 conversion contract.

"We tendered for the contract without knowing the target machine." he told Computer

One System 4 is a general data processing machine at ESA's Space Research and Technology Centre in Noord-wijk, Holland, The other is at Darmstadt, West Germany, where it acts as a back-end batch processing machine taking satellite data collected by Semens 330 mircomputers and a CH 16 070, a machine based on the Xerox Sigma 7.

ICI. bid large 2000s (above 2960) for the contracts, and told Computer Weekly that it had not been notified it had lost.

"However," said a spokesman, "we would not be too surprised to lose this one because ICL has over 70% of FSA's mainframe business and the Agency is likely to want to spread it more evanly between us, CII-HB and Siemens." Problems with the 2980s at Dasmatadt, although now resolved, will not have helped ICL's case.

CII-HB would not comm

# Salaries to: £10,000 (UK) £18,000 (Europe)

MARCOL, one of Europe's leading software houses, urgently require experienced programming staff to support new and existing projects both in Europe and the U.K.

If you have experience in any of the following:-

Honeywell Level 66 GCOS & Level 62 TPS

● ICL 2900 VMEB/VMEK & ICL 1900 COBOL

● IBM 360/370 IMS, CICS

● COBOL, PL1, RPGII, Assembler, FORTRAN & Database

• UNIVAC 1100 & 90 Series

For further information please contact:

Derek Ashley/Penny Bailey, Marcol Computer Services Limited, 60 Queen's Gardens, London W2. Telephone: 01-402 9355.

MARCOL can offer you:-

Highly competitive salaries

A structured career path

• Interesting and challenging work

● A range of top class company benefits

MARTI

Total Capability from the Marcol Group

# UNHAPPY COMPUTER PROFESSIONALS

You can be frustrated for any reason at all, real or imagined. Over a salary you think is too low, and may well be. Over rewards and benefits that are too stingy. Over lack of responsibility, lack of incentive, lack of opportunity, lack of recognition of your talents — over lack of anything, including a future. We're here to help resolve the frustration. We can show you how good you are — and at what. We can help you obtain the right job, if you're in the wrong one. With the right company and the right people.

As for the right attitude, once you know yourself, you will adopt it. You can manage your career.

You will benefit from an initial confidential discussion with us.

# INFORMATIX UNITED KINGDOM AND OVERSEAS INDEX

Haven Informatix Limited

24 Grays Inn Road London WCIX 8HR Telephone 01-831 6055 Telex 299539 HAVEN G

# MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

# COMPUTER ENGINEERS

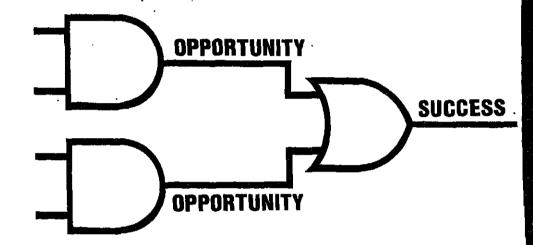
# CENTRAL OR WEST LONDON BERKS, HANTS, SURREY

to £8K + car

If you are interested in advanced systems and like a technical challenge, then Mainframes offer the best opportunities for the '80s.

If you are looking for a **Senior position** and have **Mini or Mainframe Computer Experience** then you will
find our client's systems interesting and career
prospects excellent for both **Site and Mobile**engineers.

Positions also exist for Junior Computer Engineers, so if you have a Practical Background in either electrical, electronic, or electro-mechanical engineering, you should apply. Posts available are Site based or Mobile and full computer training will be



The UK Division of this multinational computer manufacturer offers a stimulating environment and a sound base for career development, so set yourself up for the '80s by contacting Peter Gorton, Manager Computer Engineering Division.

# COMPUTER ENGINEERS

# & ENGINEERING MANAGERS

MES welcome a Senior Computer Engineer to their Computer Engineering Division

Howard Wynne will be using his considerable experience of the industry to Advise and Assist Computer Engineers with their Career Development and Managers with their Recruitment

MIDLANDS, NORTH, SCOTLAND & WALES — HOWARD WYNNE, Senior Consultant C.E.D. LONDON AND SOUTHERN ENGLAND ---PETER GORTON, Manager C.E.D.

Suite 201/6 Albany House 324 Regent Street London WIR 5AA 01-637 9611 EXECUTIVE SELECTION



SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

Ref. CW/6/80

# IS YOUR COBOL **WORTH £8,500?**

Our client is a subsidiary of a large, International Corporation with extremely diverse interests. Located very close to the A4/M4, their U.K. HQ is within easy reach of parts of Surrey, Middlesex, Buckinghamshire and Berkshire.

The management services function is well established and data processing encompasses the entire operating spectrum from production to sales. The unit has access to a large IBM 370/168, 3033 supporting intelligent terminals which provide the means for remote data capture.

Due to future development commitments there is a need for several competent programmers having:

- at least 18 months' Cobol not necessarily on IBM hardware.
- preferably, for the more senior positions, a working knowledge of IBM O.S.
- the ability to work on a wide variety of new and challenging applications.
- the desire to be recognised and rewarded on

Make 1980 a year that counts. For more information contact Jack Collings at his office from 9 a.m.-5 p.m. on 0273 833848, or if you prefer, speak to him any evening (including weekends) at home after 7 p.m. on 0273 400880. Failing that, just simply send in your career résumé and we will get back to you.

INTERVIEWS CAN BE ARRANGED LOCALLY DURING EVENINGS OR WEEKENDS IF NECESSARY UNIVERSITY OF EAST ANGLIA

#### INFORMATION OFFICER

in the Computing Centre. The principal duties are to eogenies and assist in the preparation of all user documentation are to eogenies and assist in the Properties of the Centre. The Centre is responsible for providing easy user access to a versety of ICL. 18th and CDC computers Some programming approach is desirable as duties could include programming advisory work at well as the organisation of introductory courses to computing Applicans should be of degree standard and able to write clearly and effectively, within a computing approach effectively, within a computing environ-ment Salary will be on the 18 scale, £4153 p.a -£6981 p.a . (plus 6% increase from the 1st April, 1980)

Further details of the appointment are available from the Establishment Officer, University of East Anglis, Norwich NR4 71J (0803 58191 521 2126) with whom applications should be lodged not later than 9th Fabruary 1880.

UNIVERSITY OF SURREY COMPUTING UNIT

#### PROGRAMMER/ ANALYST

The Unit is currently installing an integrated system of linked Prime computers — the most advanced and powerful multiscess system in Furnals.

Applications are invited for the post of Programmer / Analysi within the Computing Unit and the successful candidate will be successful candidate will be successful candidate. the succession candidate will be expected to work on the develop-ment of software for the new

smulliseva.
Further particulars can be obtained from the Deputy Secretary (Personnel), University of Surrey, Guildford, Surrey GU2.5XH, telephone Guildford 71281, extension 452 Applications from men and women in the form of a curriculum vitae, including the names and addresses. cluding the names and addressed of two referees, should be sent to he same address as soon as pos

# DATA CONTROL SHIFT SUPERVISOR

**Tooting S.W.17** 

£5486-£7042

The South West Thames Regional Health Authority wish to appoint an additional Data Control Shift Supervisor to be based at the Regional Computer Centre, Springfield Hospital, Tooting,

Computing, within the centre is currently based on powerful ICL 1904S hardware, running under GEORGE 3, which provides medical, financial and management information services to a region containing a population of some 3 million and over 150 hospitals.

The essential requirements for this position are at least two years Data Control experience, preferably in a supervisory role, plus a working knowledge of GEORGE 3 JCL. The successful candidate will work on a 2-shift basis and be responsible for the supervision of a 4-strong team. The salary quoted includes London Weighting

For further details, phone Sylvia Lyons or Les King on 01-839 3351 up to 8.00 p.m. each evening, or write, with comprehensive career details and telephone number, to: Modem Computer Services Limited, FREEPOST, London, WC2N 5BR.

01-839 3351 MODEM Data Processing Staff Consultants

SCHOOL OF ELECTRICAL

LECTURER/SENIOR LECTURER

The Department of Computer Science is one of five Departments (Electric Power. Electronics, Communications, Systems and Centrol. and Computer Science). Computer Science of Computer Science of Computer Science and Centrol a

COMPUTER SCIENCE

applicants should have a suitable ligher degree and provide evidence of secting and reasearch capability. Duties will include undergraduate and gradute teaching and research involvement. One preference exist for applicants with experience in software and accretion species of computer release.

Salary per annum: Senior Lecturer eA21,858 range eA25,477. Lecturer eA16,291 range eA21,401. Commencing selery according to qualifications and experience.

nyona ciosa 11th April, 1980.

For fuß information about conditions de engloyment and method of application with the face is a function of Common wealth Universities (Apple ), 36 Gordon Square, London WC1H OPF.

**DERBY COLLEGE OF** FURTHER EDUCATION Wilmorton Derby DE2 8UG (Tel. 73012)

lications are invite LECTURER

EDUCATION Application forms and urther particulars from Bbove address

FOR COMPUTER



## How to beat the bush telegraph

And what about all those jobs that are never adverti because other good people hear about them first? You miss out.

Break into that closed circle by enrolling with Lansdov We'll thump your career details onto the desks of senor managers at thousands of companies — except those you They'll consider you for the immediate jobs and they'll

have you on file for the future. When they want you they'll ring you - not us -ou're immediately short listed for a job you might no

Just fill in the coupon and send for our Summary Form And do it at once because it's the only one that's with

usands of applications. Stuart, Tait, Lanadowne Appointments Register, Design House, The Mell, London W5 5LS. Tel: 01-579 2282 (24 hour answering service)

Our clients would like to meet men and women, aged 20.4%, earning between £4,000-£9,000 in any of the following SYSTEMS ANALYST 🗆 PROGRAMMER 🚨 Mr./Mrs./Miss

Stuart, Tait, Lansdowne Appointments Registe Design House, The Mail, London Wo FLS Tel. 01-579 2282 (24 hour enswering service)

ansdowne

# **MANAGEMENT & EXECUTIVE SELECTION**

telephone 01-637 9611

# SALES £11 - 17K + CAR The magic of think in a

The real magic is not just thinking, but having the resources of a multi-national computer manufacturer behind you who is willing to invest time and money to develop your career and professional sales expertise, by providing you with intensive product and sales training courses, full support and an extensive range of sophisticated products, covering both the accounting and scientific, data processing and wordprocessing markets. If you are a sales person selling capital equipment or DP services and want a true opportunity to sell computer hardware at the highest levels . . .

# Start at the top and work up!

OPENINGS EXIST IN LONDON, SOUTH WEST, MIDLANDS, NORTH WEST AND EAST AND CENTRAL SCOTLAND

For more details, contact Robin de Rouen or Tony McGrath on 01-637 9611

Suite 201/6 Albany House 324 Regent Street London WIR 5AA 01-637 9611

**MANAGEMENT &** EXECUTIVE SELECTION

# will be a distinct advantage. We offer a five-figure salary negotiable according to experience. Location South East. Ref. FY.1533/A. Salary will be five-figure, negotiable according to experience. Location South East. Ref. FY.1533/C.

Experienced soles managers and staff are needed at a number of locations throughout the UK. Candidates must have a successful track record in competitive main-frame selling. Knowledge of IBM 370/4300 systems would be advantageous. systems would be advantageous.

ge £8,000-£15,000 an additional very heme.

Ref. FY.1533/B.

Candidates will have good an-round 3/0/9500 experience. A number of these positions will require in-depth experience of DOS/VS and/or DOS/VE. Salaries will be within a range £7,000-£12,000 dependent on experience.

Ref. FY.1533/D. ssic salaries will be within a range £8,000-£15,000 depending on experience, with an additional very competitive no-limit incentive scheme.

These are challenging opportunities and the people who are recruited must have the ability to fill senior

bilities will be discussed with candidates at interview. Please write to M. Hordern giving your home address management posts as the venture expands. All pos-itions will qualify for an excellent range of benefits including initial carnings guarantee and performance-related bonuses. Detailed job objectives and responsi-

-outstanding opportunities in a major new business venture

Our client, a well-established computer corporation, is about to start a major new main-frame marketing venture. The product is a highly competitive state of the art system at the IBM 4300 level, backed by the field maintenance force and other supporting the next few months.

Product Marketing Executive Technical Support Manager

You will need to have extensive main-frame product marketing experience. IBM 370/4300 knowledge will be a distinct advantage.

Candidates must have in-depth 370/4300 systems and software knowledge plus field support experience ideally 3 years of which have been in a management

Management Selection Limited International Management Consultants 17 Stratton Street London W1X 8DB

AUSTRALIA BELGIUM CANADA: FRANCE GERMANY HOLLAND IRELAND ITALY SOUTH AFRICA SOUTH AMERICA

SWEDEN ..

Field Systems Support

ties exist at a variety of levels and loca-

dons for experienced field systems support staff. Candidates will have good all-round 370/4300

SWITZERLAND ... U.S.A.

# The best travel package available.

Italy, Finland, Switzerland, Spain, Holland, U.S.A....A random sextet of locations you could visit this year if your skills and spirit of adventure match our client's challenging Data Processing requirements.

Due to expansion and internal promotions our client, based in Slough, requires professional COBOL programmers and systems designers with a minimum of three years' experience, able to negotiate at all levels.

The successful candidates will perform a consultancy function implementing on-line distributed systems and developing new applications. The abilities to control projects away from home, sometimes under pressure, and to accept management responsibilities, are essential.

These positions are important and well paid, with salaries up to £9K. In addition there is a high educational potential: expertise will be gained in Networking, On-line development techniques and Database.

Apart from being the best travel package available, this is an exceptional career opportunity to work with an unusually talented team in a major international company.

Act now, by writing to Lionel Elton of Business Resources, Old School, Redbourn, Herts.

Or better still, call him on Redbourn (058285) 3888 – during office hours.

Aylesbury (0296) 630063 – during evenings of the weekend.

Business Resources
The computer recruitment consultants

# MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

# SALES PROFESSIONALS!

-get a more of that something that makes success easy

TO £20K + CAR

You get to be the No. 1 manufacturer of computer-based word processing systems in Europe by delivering the right product to the right market at the right time.

You create a top sales force by offering sales professionals first-class incentives, first-class prospects and first-class support.

If you like travelling first class why not pick up the phone now, call us and find out why we believe this opportunity is just a little special.

Contact Faye Ogilvie or Tony McGrath

ESSEX, CROYDON, SUSSEX, CENTRAL LONDON BRISTOL, MANCHESTER, NEWCASTLE, BIRMINGHAM

# THREE QUESTIONS???

1.	Are	you a	Salesman?	<b>Engineer</b>	? or	both?
_				•		

- 2. Do you want to sell a wide range of quality peripheral products? . . . . . . .
- 3. Do you want to earn £12K first year + Car (conservatively speaking)?...

YES!

Then pick up the phone and call us to arrange an immediate interview to find out exactly what our client has to offer. Opportunities exist in Manchester, Midlands, London & Home Counties.

Contact Fave Ogilvie or Tony McGrath

Sulte 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION



# SYSTEMS ANALYSIS AND SOFTWARE PROGRAMMING PEOPLE:—

# MOVE TO MOW CONCORD OPPOSITEDATION

Littlewoods is one of Britain's biggest retailers . . . a major force in both the Mail Order and the Chainstore sectors of our

We are committed to continual investment in DP hardware and systems so that we can keep our pre-eminent position and also mainiain our growth into the nineteen-eighties and beyond.

This investment policy has made us Honeywell's biggest European user, with two quadruple H66/80 processing systems both with a megaword of storage and associated peripherals. There are more

than 275 analysts, programmers and technical staff in our Systems Development department, working on projects which include real time order processing, merchandising, warehouse control systems, stock allocation and point-of-sale applications.

We now want to appoint more Analysts and Software Programmers with at least three years' experience. If you are interested, come and talk to one of our top DP executives at a walk-in interview next

# Meet someone who talks your language.



s responsible for developing DP

systems for our expanding Chainstore Division; about 90 rolessionals are engaged on a wide variety of projects. It's stimulating work in a



MALCOLM LANDAU leads a team of more than 100 personnel currently works; 14 different projects correct. with systems development.
Mail Order business Thusa
growth industry, and its
computerisation offers are computerisation offers are computerisation offers are computerisation.

# ...at one of our walk-in interviews.

Tues, 29 January

# The Littlewoods offer mentals

- Up to £10K for experienced Analysis and Software
- Exceptionally-generous relocation expenses. including legal ices, estate agents iees, paid househunting visits, settling-in allowance and interest-free bridging loan.
- Comprehensive iringe benefits, including generous discounts on merchandise sold by the company.
- A genuine opportunity to become deeply involved in which will have a major. impact on Littlewoods' business during the next
- and one with an exceptionally low staff turnover).
- A thoroughly professional working environment where high standards, technical training and management development are regarded as essentials.
- the development of systems
- Excellent career progression in one of Britain's largest systems development teams
- White House Hotel. Albany Road, NWI LONDON Noon - 8 p.m. Eurocrest Hotel. Weds, 30 January Shoppenhangers Ro Noon - 8 p.m. Holiday Inn. Mon, 28 January Bellahouston Hotel, 517 Paisley Road West **GLASGOW** Mon, 28 January Noon - 8 p.m. Royal Turks Head. NEWCASTLE Tues, 29 January Grey Street Noon - 8 p.m. Queens Hotel, City Square LEEDS Weds, 30 January Noon - 8 p.m. Holiday Inn. Lower Castle Street BRISTOL Thurs. 31 January Noon - 8 p.m. Grand Hotel MANCHESTER Thurs, 31 January Noon - 8 p.m. Aytoun Street

li you can't make it on any of these dates, write or telephone Mike D'Aeth, Maroni Appointments Department, Littlewoods IM Centre, Old Hall Street, Liverpool V. Telephone 051-238 8518 (24) felephone 051-238 8516 (24-hour Ansaione service)

A major industrial organisation committed to a substantial investment in data processing wishes to recruit several additional software specialists.

These are senior appointments and will offer the successful candidates exceptional opportunities to develop their careers in the technical side of data processing.

The installation will use large scale IBM equipment and candidates for these positions MUST have extensive practical experience using IBM hardware and software. Specific in-depth experience should include MVS, CICS and DL/1.

Suitably qualified candidates should contact Ivor Norton, by telephone or in writing, quoting the appropriate reference, n order to arrange a confidential discussion. Initial interviews will be arranged at locations to suit candidates convenience.

This position entails full responsibility for all aspects of software maintenance and development in this large IBM site. Candidates must be experienced technical specialists who have the personality and experience to lead a small team of

systems programmers and database specialists. This is a management appointment and offers considerable growth potential to the successful candidate. (CW/8006)

Candidates for this appointment must be experienced IBM systems programmers of several years standing. Specific knowledge required is CICS and OS/VS1 or MVS. (cw/8007)

These positions should appeal to candidates who see their career in the area of database development and ultimately perhaps database administration. DL/1 experience required.

# Ivor Norton Management Services Ltd

RECRUITMENT CONSULTING DIVISION 52 Shaftesbury Avenue, London W1V 7DE - 01 734 8862 - P.O. Box 63 Copthall Tower House, Harrogate HG1 1TS, Tel Harrogate 66628-24 hour answering service (0423) 5531 1

# Programmers & Programmer/Analysts

# What makes Tektronix a good company for you?

the field of electronic test equipment, computer peripherals and microprocessor development systems—so you'll be at the centre of innovative technology.

You'll be joining a small enthusiastic team in a really rogressive environment at our computer installation in North London where we are using a new DEC PDP11/70 ulilising COBOL.

able scope for working on your own inlitative, putting your on salaries and benefits. ideas into action and broadening your skills. If you enjoy working as a member of a team, are highly adaptable and thrive in a busy environment, Tektronix is the place

The Programmer we're looking for should have at Tel: 01-882 6100.

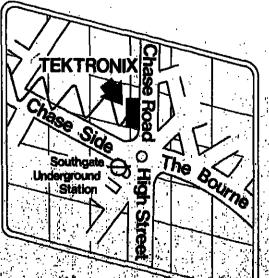
Come and see for yourself on Tuesday 29th January between 5pm & 8pm

**Tektronix**•

For a start you'll be working with the world leader in least a year's experience and the Programmer/Analyst a minimum of two years with a desire to further develop his/her systems experience. For both positions a commercial background is necessary and a knowledge of COBOL would also be an advantage.

If you are interested in finding out more come along to our informal interviews on Tuesday. Our Systems Manager will show you our operation and talk to you As a small department were able to offer consider- about our work, and our personnel people will fill you in

> If you can't make it just telephone or write to Michael Gunn-Smith, Personnet & Training Co-ordinator, Tektronix UK Ltd, 313 Chase Road, Southgate, N14 6JJ.,



inner London Education Authority SOUTH-EAST LONDON COLLEGE Department of Business as Administrative Studies

LECTURER I IN BUSINESS STUDIES

revious teaching experience would be a

Lecturer I. On an incremental scale within the range £3480-£5088, plus £6 por month, subject to formal approval (plus £474 inner London Allowance), starting point deponding on qualifications, training and experience.

Assistance may be given towards muschold removal expenses.

Application forms, returnable within two weeks of the date of this advertisement, and further particulars from the Sentor Administrative Officer, SELTEC, Lawisham Way, London SE 1 UT. It is assential to quote the correct reference number.

Take your next contract through us. Call or send C.V. Vic Groves, Vici O'Prolessingtal Bervices Ltd, Knatuford WA 18 68V Mautaloral (0):669 52877

**BOX Nos.** 

Box number replies should be addressed to: Box No.

> c/o Computer Weekly Dorset House Stantford Street London SE1.9LU

TO £81/4 K ANALYST/PROG. Tyls DP experience including at least 1 yr. COBOL.

BNR. PROGRAMMER supervisory or program design expanence desirable To £8700 SYSTEMS ANALYST London At least 2/3 yrs. in D.P. sitid 2 yrs. in systems doson, plus experience of Telejinocessing loref. CICS). Real Time Systems, or Datebase (pref. IDMS). To work in

COMPUTECH 01-794 0202

# Supervisor

To £7000 (Incl.Shift+ Car Allowance)

To lead one of our operating/data control teams on a two-shift system. You should have extensive operating and/or data control experience, and the ability to supervise and motivate staff. Bextey has an expanding progressive installation to which you would make a positive contribution in the control of day-to-day computer operations and teleprocessing sacilities. A major expansion of hardware is planned. Currently in use is a 1 magabyte (BM 370/138 using DOS/VS, POWER/VS, with an extensive CICS T.P. network and Data Enjry by Redifign R300.

For details/forms contact Allen Chambers on 01/303 7777; Ext. 782/ or et Data Processing Department. 9 Brampton Road, Bexléyheath, Kent, DA7 2EZ. Closing data: 11 February, 1980.

Bexley



# Lead ournew Warehousing Project

Competitive salaries + car Berks

Could this be your first full project responsibility?
Our Client – indisputable market leaders – are a rapidly growing manufacturing and distribution concern with a turnover approaching £70 million. A new central on-line warehousing project awaits the right people to set the wheels in motion.

Analyst - This position carries a company car
Your background should include both formal analysis and
programming within stock control/distribution/invoicing applications.

Programmer Essentially with RPG II.

Reporting directly to the Systems Manager you will carry out site investigations to produce an effective user orientated business system. Thereafter yours will be a key liaison, development and support role.

This is a rare opportunity to gain early recognition for a major project at an early stage in your career. Rapid growth of the small team should provide excellent career progression.

Both positions attract relocation expenses. In the first instance contact David Scarlett on 01-935 0671 or (evenings and weekends) 01-540 3549.



London 01-935 0671 3 Mandeville Place, Wigmore Street, London WIM 5LB Birmingham 021-236 3781 35-37 Great Charles Street, Queensway, Birmingham B3 3JY Manchester 061-833 0427 Blackfriars House, The Parsonage, Manchester M3 2JA

# Open Evening Greenford and Slough

CMG's expansion continues and with it our need for experienced computer professionals looking to further their career with one of the most progressive companies around.

We'd be delighted to meet you at one of the - addresses on the right. There you'll have the opportunity to meet some of our staff and managers and discuss the career development opportunities that we can offer. We require:-

## **Client Service Consultants**

To implement and process the applications of those clients wishing to use our bureau services. These applications increasingly involve the use of terminal equipment in the clients' office.

#### **Sales Executives**

To sell our comprehensive range of business systems to our prospective bureau clients.

#### Secretaries

To provide full secretarial support to a team of specialists.

# Programmers/Analysts/Consultants

To undertake a variety of consultancy and development projects; mini and main frame, for our bureau and for clients' in-house installations.

If you can't make it, please telephone or write quoting ref. M6, to:

Norma Cozens at Middlesex Office, 01-578 4563.

Just choose the venue nearest to you.

**Wednesday 30th January** Between 17.00 and 20.00 hours CMG (Middlesex) Ltd., Westway House, 320 Ruislip Road East, Greenford, Middx.

**Thursday 31st January** Between 17.00 and 20.00 hours. Holiday Inn, (M4, junction 5) Commonwealth Suite, Ditton Road, Langley, Slough, Berks.

Services Services Association

# Systems Analysts & Programmers

# Tobeinthe centre of things, get out of the centre

So you thought all the most significant computer centres were in the city?

Think again. Here at Cheshunt, set in rural South Herts, Tesco is operating possibly the most advanced retail installation in Europe.

Based on a brand new IBM 3033, the Tesco Computer Centre will have to cope with further spectacular growth in the 80's following our dynamic expansion in the late seventies.

To give you some idea of the scale of our operations, we regularly run over 1000 programs. But even that is less significant than the on-going development work that embraces some of the most sophisticated computerised retail systems applications anywhere in the world.

So the challenge is most certainly there. And, so is the money. Because following a recent review, Analysts are now earning from \$7,000-\$10,500 per annum, and Programmers and Consultant Programmers from \$6,000 \$10,000 per annum.

In addition, you will receive all the benefits you associate with a large, successful company-plus some very special Tesco extras. An active Country Club for example which offers a wide range of sporting and social facilities. And a superb subsidised staff restaurant.

Tesco is a generous employer in other ways too. You need to move into the Cheshunt area? Then Tesco will pay your relocation expenses and even assist in house-hunting.

A pleasant country location...the chance to work on new hardware ... good pay ... outstanding working environment ... excellent benefits-just add up the advantages of joining Tesco for yourself. And make 1980 theyear you move into the big time. Contact Sue Horner, Senior Personnel Officer, Tesco Stores Ltd., Delamare Road, Cheshunt, Herts. EN8 9SL, Telephone Waltham Cross 32222

POSTAL APPLI	ICATION .	
Name Address	San Constitution	
Auuraas		
Tél. No.		CW/24/8





**Programmers** 

LIVERPOOL	,
(DR/422) 18 + months BM COBOL/ASSEMBLER	to <b>£60</b> (
(DR/423) 18+ months ICL COBOL (DR/424) 2+ years IBM COBOL/PL-1	to <b>£60</b> (
(DR/425) All Levels ICL COBOL	c <b>£60</b> ( to <b>£60</b> (
(DR/426) 3+ years ICL COBOL Supervising	to £70
(DR/427) 4+ years ICL COBOL/RPG2	to £75
MANCHESTER	ip mr •
	to <b>£50</b> 0
(DR/428) 12+- months ICL COBOL (DR/429) 12+ months IBM COBOL (DR/430) 18 months PDP using BASIC	to £600
(DR/430) 18-F months PDP using BASIC	.f. Ne
(DR/431) 3+ years IBM COBOL/ASSEMBLER	to £700
LEEDS/BRADFORD	
(DR/432) 21 + years COBOL	c £60(
(DR/433) 2+ years Honeywell Experience (DR/434) 2+ years ICL 1900 COBOL (DR/435) All Levels PDP BASIC Experience	to <b>£550</b>
(DR/434) 2+ years ICL 1900 COBOL	to <b>£550</b>
(DR/436) All Levels PDP BASIC Experience	to £600
(DR/436) All Levels ICL 1903 (GEORGE III) (DR/437) All Levels ICL 2900 (VMEB)	to £650
(DR/438) 2 + years NCR COBOL	to <b>£650</b> £ Ne
SHEFFIELD	C IVE
(DR/439) 2+ years ICL COBOL (DR/440) 2+ years IBM COBOL/ASSEMBLER	to £600
(DR/441) 2+ years ICL 1900/2900 COBOL	to £625
	to <b>£700</b>
TYNE & WEAR	
(DR/442) 2   years COBOL experience	. c £550
(DR/443) 3- years CICS experience	to <b>£800</b>
(DR/444) 12-+ months IBM COBOL experience (DR/445) 3 i- years PL/1 or IBM COBOL	£ Ne
(UR/445) 3 1 Years PL/1 OF IBM COBUL	. to <b>£650</b>
Analueta	
<b>Analysts</b>	
LIVERPOOL	ı
(DR/446) 2+ years ICL Business Experience	.to <b>£620</b>
(DR/447) 2+ years IBM Commercial Systems (DR/448) 3+ years IBM Environment	to £630 to £650
(DR/449) 2+ years (plus Programming Background)	to £700
(DR/449) 2+ years (plus Programming Background) (DR/450) 2+ years Business Experience	£Ne
(DR/451) 18 + plus months Systems/Applications	£ Ne
MANCHESTER	
(DR/452) 2+ years IBM Environment	to <b>£600</b>
(DR/453) 2+ years General Business Experience	c £650
(DR/454) 2+ years Retail Environment	c £700
(DR/452) 2+ years IBM Environment (DR/453) 2+ years General Business Experience (DR/454) 2+ years Retail Environment (DR/455) 3+ years General Systems Experience	to £725
LEEDS/BRADFORD	
(DR/456) 4+ years (including programming background)	c <b>£70</b> 0
(DR/456) 4+ years (including programming background) (DR/457) 2+ years IBM Business Environment	c <b>£600</b>
(DR/458) 2+ years Retail Environment (DR/459) 18+ months Commercial Business Experience	to <b>£650</b>
	to £675
SHEFFIELD	
(DR/460) 4+ years ICL Business Background	c <b>£600</b>
(DR/461) 18+ months General Commercial Experience	to £600
(DR/462) 2+ years Business Environment	£ Ne
TYNE & WEAR	,
(DR/463) 18+ months (plus programming background)	to <b>£650</b>
(DR/464) 24 + months General Business Experience	c £725
(DR/465) Senior Systems Analyst with Database	to £750
BIRMINGHAM	
(DR/466) 18 + months commercial IBM experience	to £620
UN/40/112 i Months ICL commercial/husinese evnerience	- A-FEEA
Interested ? Send couponFREEPOST or phone quoting relevant	reference
NAMEAGE	
ADDRESS	
	<del></del>
PHONE HOME	
BUSINESS (will be used discreetly)	

YRS ANALYSIS \_\_\_\_\_ YRS PROGRAMMING.

SALARY REQUIRED
JOB SOUGHT.\_\_\_\_

REF No ...

-Recruitment Agency

DATA RESOURCES AGENCY P O BOX 63. 8th FLOOR, COPTHALL TOWER HOUSE HARROGATE HOT ITS TELEPHONE HARROGATE 55311

MACHINES USED.

LANGUAGES USED.

U.S.A.

# systems consulting opportunities

CBM INC is a 10-year-old publicly held professional services firm with offices in Atlanta - New York - Chicago - Los Angeles - Minneapolis. We are seeking individuals with demonstrated academic excellence and strong technical background to join our dynamic growth oriented company. Immediate openings exist for:

# • SYSTEMS ANALYSTS

Will be involved in feasibility studies, systems analysis, systems design, implementation and project management. Five or more years of experience in the design and implementation of medium-to-large scale computer applications required. Knoeledge of database, teleprocessing and distributed processing a plus.

# • PROGRAMMER ANALYSTS

Will be involved in detail design and programming of a variety of applications. Requires 2-3 years of analysis and programming experience in an OS/MVS COBOL-TSO environment. Experience in IMS DB/DO, CICS, PL/1, BAL and mini computers helpful.

A career with CBM offers exceptional potential for financial and personal growth. If you have excellent oral and written communication skills, and would like to enjoy the variety and challenge of the consulting profession, call Cecilia O'Toole on 021-643 5119 to discuss these exciting possibilities with one of our UK representatives.

CBM 999 Plaza Drive
Schaumburg, Illinois 60195
SYSTEMS CONSULTANTS • an equal opportunity ampliyes at //

# Can you make it to the top in Sales?

EMS have hundreds of attractively packaged sales vacancies throughout the entire UK. We're now so successful placing people that we've used up our entire Data Bank of available candidates. We seek salesmen for:



Mainframes
Minis
Turnkey Systems
Peripheral Equipment
Bureau and Consultancy
Sales Support
and Marketing

einis

Phone: 021-454 7906 or 0782 623665, or write to Recruitment Division E.M.S. Data Centre Tricorn House, Hagley Road Fiveways Edgbaston

**Start 1980** 

The way you mean to go on! WINNING!
Thanks to EMS job opportunities

Fill in the endorsed application form

#### SYSTEMS ANALYST — NORTH WEST

#### £7,000 to £10,000

0782 623665 John Wood

nalysts to work with our consulting teams developing large commercially originated systems for major UK trading group coupled by a previous duration of programming involvement. We envisage all candidates having worked on success

Programmers the optimum information to user specifications, presenting drefts for approval at all stages. Next, accurate specifications will be required down to programmer lovel, clearly given Pass experience of Accounting. Distribution. Payrell and general commercial systems is required. Condidates should preferably be educated to a minimum. A level standard, white patternes will be for an HNC/D of degree.

Sound career opportunities exist for consultants wishing to transfer later to our Turnkey Division installing mini computer based systems, or to continue with both our national installing mini computer based systems, or to continue with both our national intermediate phone activities.

The early VK interviews please phone argently today for an application form:

" John Wood — 0782 82365

#### PACKAGE SYSTEMS DESIGNERS -- BIRMINGHAM

#### TOP SALARY NEGOTIABLE

renced System Designers with relevant mini experience, capeble of controlling and co-ordinating beam development on package design. We particularly seek Systems Designers with relevant mini experience, capeble of controlling and co-ordinating team development on package design. We particularly seek Systems Designers with the design and development of Packages with as Ledgers, Payroll, Sales Order Processing, Stock and Production Systems. All packages will be designed and the optimise M.I.S. prospects.

development in future. Any apparance of past attainments in this cree for each candidate, as large budgets are being committed to achieve a modularised solution, and avoid unnecessary repelled of 4 to 8 people to commit to schlevable surgets, and to succeed, will be important. A cound knowledge of mini restrictions and operating systems peculiarities will be important. Pa

We have a modern, well-sampled out Centro with a wide range of factimes, committed to assisting futuristic software development for a growing and diverse range of factimes, committed to assisting futuristic software development for a growing and diverse range of factimes, committed to assisting futuristic software development for a growing and diverse range of manufacturing and progresses Mini Project Manager capable of making a major contribution towards both current and future development plans. Significant scope for cases progression for candidates of withcast cabirs, able to make an early and positive contribution towards group development.

Reply to less dapper — 021-454 7805

## ANALYSTS AND SENIOR ANALYSTS — COMMERCIAL INSTALLATION CHESHIRE

UP TO £8,000

als 1930 3. Any integral results a new installation organity requires a large series of adultional experienced annivats to work an large on line therefore the design projects into the first of the fir

EMS alone can give you access to all the vacancies throughout the UK with a unique computer sed job marketing system. We are injuridated with requirements daily an example of the opportunities available to you up an EMS application form if you can self whive over 50 jobs for every candidate. Is 10 minutes of your time worth a total market approval? EMS will instantly give you access not only to all the udvertised vacancies, but the hundreds which are not EMS get results. Physiq us today, and

#### CONTRACT VACANCIES £200 to £300 p.w.

London & Home Counties — Analysts and Programmera.
PL/1 Programmers. Systems stalf — London and Saudi Ar
IBM System 3 RPG II Programmers — City.
IBM and Databus experience — various.
IBM TSO — Herts.

PDP 11. Assembler and Data Communications — City

Midlands — Analysts and Programmers.

Honeywell Series 60 GCOS — Systems Programmers.

Honeywell L64-IDS II — Birmingham.

Honeywell L64-IDS II — Birmingham.
ICL 2903/4. New Range — North Staffs.
Mini Logic Designer — North Staffs.
IBM Analysts and Programmers — South Birmingham (6 month

IBM CICS Analysts — Cheshire and Lancs (1-3 years).
IBM Stock and Production Analysts — Cheshire (1-2 years).
Systems Analysts and Designers — Liverpool (1 year).
IBM Cobi Programmers — Manchester / Cheshire (1 year).

Overseas
Saudi Arabia — PL/1 Programmers.
Saudi Arabia — IMS-PL/1 Analysis.
Kuwait — CICS Systems Designers and Programmers.
America — IBM and Honoywell — various opportunities 1980.

eaas

Phone: 021.454 7808 or 0782.623665, or write to Recruitment Division E M S Date Centre Tricorn House Maguey Road Fiveways Eughaston Birminghant



Experienced analysts are required by an electronics company to assist with a series of development projects. Ideally all candidates should have sound background in manufacturing with good knowledge of financial applications, marketing and sales, Our client requires analysts capable of making an early contribution towards the installation user requirements and being capable of working with a minimum of supervision

Consultant - Carol Proudman - 0782 623665

# SYSTEMS ANALYST UP TO £8,000

A company employed in the manufacturing sector seek additional analysts to work in manufacturing environment on a variety of development projects. Tasks include customarising and implementing packaged manufacturing systems, training of users, writing and implementing departmental procedures, preparing and maintaining systems documentation, project planning and control, supervision and programming of any client associated programming requirements, design specification, testing and implementation of all user systems assigned to your personal control. A variety of packages are currently being used including DBOMP, RPS.SAFES, MAAPICS, OMAC and MCS-6. Candidates should preferably be educated to HNC or degree level. Relocation assistance will be provided where appropriate. Consultant — Carol Proudman — 0782 623665.

## MINI ANALYST/ **PROGRAMMER**

Candidates for these positions should have experience of PDP-11/L4. PDP-11/34 or Systine 3,000/5,000 configurations. Experience should cover a general commercial and financial applications of manufacturing organisations. Although the position will be based in Sheffield successful candidates must be prepared to spend considerable amounts of time on-site at remote locations installing systems on behalf of the parent organisation. He/sha must therefore be a driver and show willingness to operate in a demanding environment. Staff report direct to the Mini Computer Projects Manager and candidates will initially take responsibility for systems implementation and all facets of software development and support down to maintaining existing installations in and throughout Leicestershire. Expansion of mini usage within the Company has already begun and it is envisaged this will lead to involvement in other hardware and softwere systems in the near future. It is likely that initially these will be based upon the new ICL system 10 / 120 series. Candidates must be capable of working closely with all levels of staff up to Board level. It is unlikely that enyone with less than 4 years' experience in systems and programming will have the necessary background. Sound career opportunities exist for successful candidates. Consultant — Carol Proudman — 0782 623665.

#### SALESMEN

MANCHESTER AND LONDON

A controlled systems organisation are rapidly developing their UK markets and urgently seek additional experienced salesmen to market word processing, terminals and peripheral equipment as specified within the company product range. The group also have a series of accounting/business systems machines to provide a lucrative extra product range where the opportunity occurs. Five new salesmen are required immediately and attractive commissions scheme exist for top, productive sales consultants. Plesse apply urgently for an application form. Consultant — Carol Proudman — 0782 623665.

UP TO £12,000

#### SYSTEMS ANALYST/ SENIOR SYSTEMS **ANALYST ON-LINE** DEVELOPMENT

A manufacturing group in Croydon are seeking additional experienced analyst to assist with development of a wide range of DP techniques used in many different functions throughout the factory to reduce manufacturing cost. Already communications orientated production information and control system is being piloted for UK group use at this particular company. Successful applicants should have at least three years experience of accounting, and/or manufacturing systems. Degree would be advantageous but experience in a manufacturing environment is more important. The company are prepared to pay up to £8,500

Consultant - Carol Proudman - 0782 623666.

## SENIOR ANALYST/ **PROGRAMMER**

UP TO £8,400

PAYROLL AND PENSION SYSTEMS -

The payroll and pensions group provide a service to both central and local salaries, pensions and personnel departments. This service entails the provision, implementation and maintenance of systems used in handling data on salaries and pensions pertinent to staff employed within a large UK group. Currently there are up to 40,000 personnel records of data held within the files of the various systems in use. Senior Analyst/Programmer reports to the Payroll and Pensions Group Manager and is required to handle the day-to-day running of the department including being responsible for the work of two more junior employees. He/she will provide general and technical guidance on programming techniques and methods. The Senior Analyst / Programmer must have a good knowledge of Cobol and sufficient Assembler programming experience to maintain current Assembler programs, plus ability to lead a small team of people whilst handling work of a very confidential nature. An attractive salary will be negotiated for candidates of suitable experience.

Consultant — Carol Proudman — 0782 623665.

# **DEC SYSTEMS PROGRAMMER**

The scientific computer centre of a large industrial group provides a computing service for engineers and designers in areas such as computer sided design and modelling. The scientific centre has a DEC 2050 which is coupled to an extensive communications network including IBM mainframe. The person appointed will ideally be a graduate in either science or engineering in addition to having a minimum 2-3 years' practical Assembler programming experience using DEC-10 or DEC-20 equipment. Attractive salaries of up to £8,000 will be paid for satisfactory candidates. Consultant — Carol Proudman — 0782 623665

#### **TOP TURNKEY SYSTEMS SALESMEN**

Attractive basic, car and up to £15,000 first year package earnings alone. The EMS Date Centre are rapidly expending throughout the UK marketing a variety of systems to manufac-turers, stocklass and distributors. We require experienced Turnkey salesmen capable of marketing a minimum 8 systems a year using leads, seminars and canvessing techniques. We are seeking candidates of a minimum 27 years of age who have already attained at least two years in business systems marketing and have a successful record to demonstrate. We have an excellent range of hardware products and competitive sound development software systems. Scope genuine exists for top productive salesmen to earn very high commission levels where no cut-off system exists, nor will Company policy change during the forseeable future to curtail optimising earnings based upon sales achievement. EMS will be looking for the highest level of sales ability and skilful systems communicators capable of presenting an affective and considered case at Board level. We have a modern, attractive Data Centre based in the centre of Birmingham from which we control our UK wide marketing activities. The Centre is fully equipped with a variety of hardware systems including Honeywell Level 6, Data General and ICL 2904/7502. A top-class pre-sales support unit exists to enable rapid developments of feasibility studies to tendering purposes and to free up unnecessary involvement of experienced salesmen within this area whilst such studies are carried out on your behalf. We offer a unique opportunity for top, experienced salesmen to concentrate on merketing and therefore maximise sales opportunities by using a different approach to traditional sales penetration procedures.

EMS can genuinely offer you an unparalleled opportunity if you have the professional skills and ability to produce revenue commensurate with our requiren Consultant - Tony Kline - 021-454 7906.

#### SYSTEMS DESIGNER ICL 2904 BASED SYSTEMS

The EMS/ICL Systems Division based in our Newcastle-under-Lyme Centre have an urgent requirement for an experienced Systems Designer to work in a small team of analysts and programmers to take responsibility for feasibility studies, systems analysis and design for a variety of projects and regular comanalysis and design for a variety of projects and regular com-munication with the client through to systems testing, implementation and user training. This particular Systems Division has only been established for the last 6 months and will Division has only been established for the lest 6 months and will be doubling in turnover each year during the next few years therefore offering an excellent career growth opportunity for company motivated analysis to gen the opportunity of growing with the unit from its original foundation. We are already considerably shead of projected targets and envisage a successful development during the 1980s. Work varies from many original custom-built projects through eventually to convertion a variety of quelom-built projects through eventually to converting a variety of established systems from our Mini and Turnkley development unit based in Birmingham for usel on ICL 2903 / 4 and coming new range systems. An ettractive salary will be negotiated according the level of experience available with each candidate.

Consultant — Don Walklate — 0782 623665

#### TOP SYSTEMS ANALYSTS AND DESIGNERS

The EMS Consulting Division have many projects involving design and development of systems at client sites throughout UK and are urgently seeking up to 50 extra experienced analysis throughout 1980 to join our Consulting Division. Projects vary widely and incorporate manufacturers, commercial organisations. Government bodies, chain store and mail order groups, distrib tors, stockists and banks. Early opportunities exist for professional enalysts to attain a position of site Project Leader or even tile Manager on the larger contracts should you wish to develop a career within this particular area of the Company unit. Opportun ities also exist to move progressively through the Consult Division into Turnkey Systems or other trading areas of the Company. Many of the staff joining EMS only 3 or 4 years ago are now operating in a senior managerial control role and have considerably enhanced both their earnings and prospects since diversifying into an economically expanding group such as our own. A wide range of career development opportunities exist for satisfactory candidates. Please apply urgently for further details.

Consultant — John Wood — 0782 623865

## SYSTEMS DESIGNERS **PROGRAMMERS AND** PROJECT LEADERS UP TO £17.00

Our client in Kuwait, Kuwait's leading consultancy the Inter Consult Group, have on-going requirements for motivated and experienced analysts and programmers to support a wide angeof established users throughout the Gulf. Their clients include banks, chemical corporations, State Ministries, oil companies or distribution and maintenance groups through to a variety of supermarkets and trading groups. A range of attractive carer opportunities exist within this organisation which has been a major user of EMS services during the last 5 years. Preferences positively candidates educated to a minimum 'A' level with a maximum only 2 children. Accommodation throughout the Gull for more children is a problem and too expensive to consider on a contract basis. Salaries are exclusive of accommodation which is provided free of charge by Inter Consult and therefore offers excellent opportunity of saving large amounts of money durings 2-5-year contract. Interviews are held each month at various locations. Please apply urgently for an application form and a discussion regarding the next series of interview locations.

Consultant — John Wood — 0782 623665

## **MINI SYSTEMS DESIGNERS**

UP TO 69,000

A large range of Mini users throughout the southern region urgent requirements for experienced staff to undertake a wide and diverse series of development projects during early 1980. Clints include original manufacturers engaged upon specific product development to market throughout their own client base, June systems groups developing application systems on behalf of clients, major trading organisations developing their own in house systems on behalf of a significant series of users through the contract of the contract or software organisations developing products for onward profi tion throughout the Mini user base. Excellent career oppor exist with a guaranteed wide range of job interest. Salaries with very attractive for experienced staff and merit a few minutes involved in completing the enclosed EMS application form tent candidate applying will be assured of a significant range of interview opportunities.

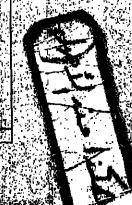
Phone: 021-454 7906 or 0782 623665 of write to Recruitment Division E.M.S. Data Centre Tricom House, Hagley Road Fiveways. Edgbaston Birmingham

EMS CONSULTANTS LTD. NEWCASTLE-UNDER-LYME STAFFORDSHIRE, ST62RS Telaphone; 0782 623665

For Office Use only

		Telex :	: 36636		© Form Desig	in EMS Copyright January	y 1960		dates. This inspensibility is soldly	क्षेत्र हो ह	per sumbgo hard crisus		Company	/ Ref. N	lo.	
SURNAME Other Names		t			Mr/Ms			$\  \ $	Reason for Seeking Ch	guga			,			·
Address		Ť ·		····	н	Tulepho	one		Details of type of posite	on wa	nted					
w					В	uş.		lt	Additional Information							_
Post Code					<u> </u>	Ext.		Н	Please explain below, in	a 10-1	l6 line precis, your appli	cations s	xperience.			
Age	Date of I	Birth	Place of	Birth	Nationality	Height	Weight									
Married	Childre	en	Car Owner	Driver	Nat	ure of any Serious	Ilinasa	11					•			
Position Reg	ulred	Li		<del></del>		Requi	red Salary Range	11					•			
Present Posit	ion					Salan	v	11								
				E DO YOU WIS				11			;				•	
Within U.K.		Yes/I		table Areas	١.	proad	Yes/No	П					•		:	
Will you mov	78	Yes/	No			irope iddle East	Yes/No Yes/No	╢								
			NUME	BER OF YEARS	EXPERIENCE			][								
Operating		Programm	ning S	Systems Design	Systems Anal	megeneM eley	ent Totel	$\ $								
Available for Available for			<u>.</u>					11	Please show the numb the blank spaces.	er of y	rears experience of the l	allowing	Where your exper-	auce ie	not specified please	use
EDUCATION			Indiana dita		ACADEMIC AC	LIEVENAENITS:		1 F	HARDWARE	$\neg$	OPERATING SYSTE	м	LANGUAGES	F	ACKAGES/SOFTV	滿
EDOCATION	. acnobi	Colleger	illiverally	1	NOADENIO AC	THE VEHICLY I G.		11	IBM 360/370		DOS		COBOL		FILETAB	
				. ]				П	IBM S3, S32 etc.		os		FORTRAN		DRIVER	
		•						Н	IBM 3030 Series		MVS .		ASSEMBLER		CICS	
				Ì				Н	ICL 2903-2905		MVT/MFT		PLAN		IMS	_
47								Ш	ICL 2950 etc.		GEORGE 1. 2, 3		PL1_		ВОМР	_
					ļ	•		11	ICL 1900		DME		RPG2		PERT	
								Н	UNIVAC		VMEB/VMEK		USERCODE		VSAM	_
									BURROUGHS		EXEC 8		AUTOCODE	L	1DS	
LANGUAGE	S: TICK AS	APPROPRIA	TE					11	NCR		OS 2000	$\rightarrow$	EASYCODER	<b>↓</b> ↓	TOS	ı—
_	French			Spanis	ıh			Ш	HONEYWELL L/68		GCOS	<u></u>	ALGOL	<b> </b>	MICROFILMING	
	German	) (		' Arabic					HONEYWELL L/6		RSTS	$-\!\!\!\!+$	NEAT	<b>↓</b>	IDMS	⊢-
	Dutch			Russie	n			1	HONEYWELL other		MOD 200/400/600	$\vdash$	CORAL	ا—ا	PROSPER	+-
	Italian			Others	:				PDP				DLI	<del> </del>	TPS	$\vdash$
BUSINESS	COURSES	3:						7	MINIS	Ļ		$\longmapsto$	NICOL	┼	ļ:	╀
		-							MICROS	<u> </u>		$\longmapsto$	BASIC	┼—		╀
										ļ		$\longmapsto$		+—		╀
								ı				<u></u>		<b>لــــ</b> ــــــــــــــــــــــــــــــــ		1

	TYPE OF INSTALL	LATION (NUMBER OF YEARS)			APPLIC	ATION AREAS YOU HA			IBER C		
Commercial	Bureau	Insurance	Scientific	T	Cost Accounting	General Ledger		Manpower Planning		Personnal	$\Box$
Manufacturing	Banking	Education	Engineering		Budgeting	Credit Control		Stock Control		Payroll	Г
Software or Packages		<u></u>			Forecasting	Order Processing		Production Control		O.R.	Γ
		•	'	- 1	Corporate Planning	Marketing	<b>—</b> Т	Petrochemicals		Aadar	
On-Line	Real Time	Time Sharing		T	Sales Lodger .	Distribution		Linear Programming		Statistics	
R.J.E.	Tele Processing	Data Base	<b>⊣</b> ·		Purchase Ledger	Traffic Analysis		Simulation			Γ
		OYMENT HISTORY			1				_		
PRESENT EMPLOYER	<del></del> _	EMPLOYED from	10			APPLICATIONS W	ORKED OF	V/EXPERIENCE GAI	NED		
COMPANY		- Coll For Ep India				-					
		•			· ·			•			
			•					ν .			
TOWN .									•	-	
TITLE											
HARDWARE		LANGUAGES USED							•		
						e.	•				
		•						•		•	
OPERATING SYSTEM		SOFTWARE/PACKAGES	,			•				Ĺ	
	· •	1.	•		[ .			1 .		·	
'			••		<u></u>		<del></del>	<u> </u>	· · · ·	<del></del>	<del></del>
<del></del>			<del></del> _	<del></del>	<del></del>	400 LOATIONOM	DOKED O	N/EXPERIENCE GAI	MED		<del></del>
PREVIOUS EMPLOYER	1	EMPLOYED from	to	•		APPLICATIONS W	OUVEDO	N/ EXPENIENCE OAI	NED		<del></del>
COMPANY				:			•	are the first of	٠٠	<ul> <li>4 (1)</li> </ul>	
			· .						•		٠,٠٠٠
<b>TO</b>			•						4.5		
TOWN TITLE				·						30 10 10 10	
HARDWARE					기 생활하셨다						$CA_{\pm}^{\prime}$
MANUE		LANGUAGES USED		0.0			<i>*</i> :		• •		e e e A de de
						And the species					1.
OPERATING SYSTEM	". '			:		and the property of	1				
OF CHATING SYSTEM		SOFTWARE/PACKAGE	•							80 July 30	
•						Control of the second			<u> </u>	<u> </u>	<u> </u>
`			A Cold Cold Cold		The second second				. 13	4.20	11 13
PREVIOUS EMPLOYE	D	EMPLOYED from				APPLICATIONS W	ORKED C	N/EXPERIENCE GA	INED.		<u> 18</u>
COMPANY		EMI COLLED Many								<b>克勒·多勒斯</b>	
				`: '.'		aryry, Meal		Bally Salat			33
1									ili Veri		. 7.
TOWN-					<b>.</b>			ore a service of the		75 8 3 17 8 9	, · · · (
TITLE .		and the second section of the second section			可移动 诗歌诗歌。		New W	<b>拉斯马克克</b>	97 is		$\hat{\beta}_{ij}(\hat{\beta})$
HARDWARE		LANGUAGES USED	高级 化多面流			经重要的 医阴道	170	<b>医中心</b> 经分类的		聚學的 医结	
		Pulantito corp.		1			( ) بالآلونوني و دولان د خود وموزي		$(\sqrt{2})$	Control of the Control	/%
				¥ : F	建筑规模等	的對於中國的發展	1-150 (14) 1-150 (14)	ON TABLE STORY	7 4	The state of the s	
OPERATING SYSTEM		SOFTWARE/PACKAGE	8	1			A de		F (4.14)		r ej
	and the second	Part Leading Countries	and the second	4 化氯	A Section of the Sect	1. 大奶 明确。		<b>国的国际基础证明</b>	* 3	Carrier Said	



# **Project Manager**

Sutton, Surrey c.£9,000

The Crown Agents are seeking a Project Manager to head a team of Analysts and Programmers engaged upon the development of existing projects.

The successful candidate will have a data processing background with a record of successful project management. Knowledge of on-line real time systems using database file structures will be an advantage, but the proven ability to motivate staff and get things done is the prime requirement.

Hardware is a Honeywell Dual Level 66/10 and the Computer Division is situated in Sutton, Surrey close to the town centre. The salary scale for the post is £7,675 to £10,425. Conditions include over four weeks holiday, flexible working hours and active social and sports facilities.

For further details and an application form ring Elaine Horne on 01-222 7730 extn. 3362 or write quoting ref. MH/111/CD.



The Crown Agents for Oversea Governments and Administrations, Recruitment Division, 4 Millbank, London SW1P 3JD.

# COMPUTER OPERATORS



#### Brentford, Middlesex c£5500

Hertz (Europe) Limited, part of the world's largest leading car rental organisation wish to appoint 2 computer operators to be based at the company's European headquarters in Brentford, Middlesex. The successful candidates will work on a 3-shift basis taking responsibility for all processing on the company's Ti 990, the largest UK installation of its kind, which is used both as a stand-alone machine and as an RJE to IBM-compatible mainframes.

The essential requirements for this position are around 2 years' operations experience plus a working knowledge of IBM OS JCL and associated utilities.

The shift system currently in operation is:

Monday - Friday 6 a.m. - 2.30 p.m. 9 a.m. - 5.30 p.m. 2 p.m. - 10.30 p.m.

For further details phone Sylvia Lyons or Les King up to 8 p.m. or write to:

Modem Computer Services,
FREEPOST, London WC2N 5BR.

01-839 3351

01-839 3351 MODFM

Data Processing Staff Consultants

JBA

# SCICON Consultancy International Limited

London

UK

Abroad

**SCICON** is a highly successful company of the BP Group, with an international reputation for excellence in developing advanced systems and software.

Continued expansion has led to a need for high-calibre technical staff to join their **Information and Business Systems Division.** 

#### Business Systems Analysts/Consultants £7,000-£13,000

Applicants must be able to show significant experience and knowledge in Finance and Banking, Manufacturing or Energy applications. We require a strong background in design and implementation of on-line minicomputer systems. However, we are not only looking for applications expertise but for people who can quickly develop into project managers.

# Systems Consultants £7,000-£10,000

An interesting career working on a variety of projects including feasibility studies, machine and software evaluations followed by implementation work. Experience of minicomputers is absolutely essential together with the ability to communicate at senior management levels.

If you feel that you have the professionalism and ambition necessary to succeed in a highly demanding and rewarding environment.

Contact: Lynn Bell, Scicon Consultancy International Limited, Heathcoat House, 20 Savile Row, London WIX 1AE. Telephone: 01-439 9761.

> James Baker Associates, International Personnel Consultants, 32 Savile Row, London, WIX 1AG. Telephone: 01-439 9311

# 1010 JOBS IN SCOTLAND

PROJECT LEADERS
SENIOR ANALYSTS
SENIOR ANALYST/PROGRAMMERS
SENIOR PROGRAMMERS
SUPPORT ANALYST/PROGRAMMERS
COMMERCIAL ANALYSTS
COMMERCIAL PROGRAMMERS
COMPUTER OPERATIONS
SALES EXECUTIVES
(MINIS, TIMESHADEMS)

£7,500-£9,00 £7,000-£8,20 c. £7,50 to £7,50 to £6,000 + CA to £7,00 to £7,00 £12,000-£18,00

SALES EXECUTIVES
(MINIS, TIMESHARING, MAINFRAME) GEOPHYSICAL ANALYST to
LOCATIONS: WEST SCOTLAND, TAYSIDE, EAST SCOTLAND, ABERDEEN

DML COMPUTER PERSONNEL SERVICES

11 CHARLOTTE SQUARE EDINBURGH EH2 4DR **IMYRIADI** 

# DATA COMMUNICATIONS ENGINEERS

# PRODUCT ENGINEER

You are an experienced engineer who has gained appreciation of software. You are now keen to specialise in one of the newest and most demanding areas of data communications technology and hold responsibility for NETWORK DIAGNOSTIC CONTROL products. This is a pre- and post-sales role in which, after extensive product training, you will provide specialist advice on the application of network management systems and the related tuning of both hardware and software for optimum performance.

READING £7500

RELOCATION EXPENSES

USE OF COMPANY CAR

# SYSTEM ENGINEER

You are fully familiar with data communications networking and have the ability to define and configure networks to meet clients total data communications requirements. Joining our client as a System Engineer you will receive comprehensive product training and will then hold responsibility for providing technical support to salesmen, defining network requirements and specifying the most cost effective and efficient solutions to customers communications needs, using some of the most sophisticated equipment on the market.

As undisputed world leader of the data communications industry the company has achieved an outstanding record of growth and technical innovation. This is your opportunity to become a key part of their continuing success.

REF. SW2/2401/CW

#### **MYRIAD APPOINTMENTS LIMITED**

30 Fleet Street London EC4Y IAA Telephone 01-353 0981 24 hours

# SYSTEMS DESIGNERS

£ up to 9,500

**HERTFORDSHIRE** 

We are pleased to be associated with one of the world leaders in automated process control. This highly productive unit is part of a multi-national organisation and employs 220 personnel in Hertfordshire. Most employees are university graduates with a degree in science, engineering or mathematics, and are actively involved in a variety of in-house projects. As the company is steadily expanding there is a constant need for talented individuals with expertise in any of the following areas:

PROCESS CONTROL OR AUTOMATED SYSTEMS—
DATA COMMUNICATIONS—
REAL-TIME SYSTEMS— CPU BUSES AND PERIPHERAL—
ANALOG CIRCUITRY
DIAGNOSTIC SOFTWARE—TRANSACTION PROCESSING
SOFTWARE PRODUCTS—MINI/MICRO SYSTEMS

This is a forward-looking company with a very pleasing working environment offering a successful future in return for creative effort. For further details please contact Mike Howard.

# 

**Edmund Howard & Partners** 

5 Brighton Road Surbiton Surrey England Tel-01-899.9183

THE SALES BIT

# ROUSSEL JUST THE JOB

- **★ New Hardware**
- **★ New Systems**
- \* Excellent Training

Roussel Laboratories Ltd. have D.P. activities both at the main distribution centre in Swindon and company headquarters in West London. Current development, particularly in the areas of Data Base and Data Communications, means that the following staff are needed urgently:

JUNIOR SYSTEMS ANALYST c £8000 London

SYSTEMS ANALYST c. £9000 London

SYSTEMS ANALYST c. £9000 Swindon

An IBM 4341 is being delivered in October and the company is propared to retrain you if your experience has been with other hardware. This is an outstanding opportunity to join a team handling only development on new equipment.

Benefits include FREE lunches, 24-hour personal accident schome, FREE life assurance and BUPA, FOUR weaks' holiday. Sports and Social Club. company pension scheme and full relocation EXPENSES.

Ring: M/S BOBBIE McCORMICK on 01-603 7335 NOW

inclusion december beetle 58 Peritroka Radia London Will Takex 201298 07-603 7335



# Canada Career **Opportunities**

## **Data Processing**

The Alberta Gas Trunk Line Company Limited, a diversified public company with international operations, is the major gas transmission company in Alberta. Headquartered in Calgary, Alberta, its corporate objectives include: to act as a carrier and purchaser of gas, to construct pipelines and plants, to purchase and develop hydrocarbon resources; and to engage in the petrochemical business and in manufacturing, engineering and in industrial research and development.

The continued growth of the company has created several career opportunities within the computer services department. We are seeking those individuals who have successfully participated in the development of commercial, engineering, and/or real time systems from the programmer level through to senior systems analysts, in a large scale IBM compatible environment.

interested applicants who wish to discuss these opportunities further are asked to submit a comprehensive resume before February 11, 1980 to -

Alberta Gas Trunk Line Company Limited, c/o Mr. J. R. Chisholm, Director. Manpower Mobility Office, 47 Upper Grosvenor Street.

London, W1X9PG.

ALBERTA GASTRUNK LINE

# digico

with tourteen years of computer manufacturing penind us, plus a lot of other achievements as well — such as a Design Council Award, a National Marketing Award, installations on every continent of the world, three new computer models in under three years — we can offer you tremendous opportunities in a vigorous British company.

Mesaure your own prospects with our Recruitment Reckone below:-

Sales Executives c. £16,000 + company car We need people with proven sales experience, motivation, tenacity, initiative, personality, impact and the will to succeed. We will match these qualities with a remuneration package second to none, like £16,000 p.a., motor car, relocation expenses, plus maximum commission with no commission cul oil point. If you are currently selling successfully then you may be our man — give Vic Shirman a call now!

installation Technicians - c £5,000 plus company car Provious exponence in insialling minicomputers at user sites is essential, programming experience is desirable. A fair amount of liavel is involved. Contact lan Campbell

Programmers - up to £8,000 plus a company car Provious commercial experience in BASIC an essential, preferably used to programming commercial systems on minis
Contact lan Campbell

Compiler Writers/System Software Specialists from £5.500 - £9.500 (dopending on experience)
To join an enthusiastic learn of experts who often have total project responsibility if job satisfaction, a challenge, responsibility and a future is what you are looking for, then give us a call.

Systems Consultants c £7.500 - £9.500 Exponence in high and/or low level languages, ability to liaise with customers, salesmen and sub-contract bothware horses is required finise a unique job opportunity, giving the light person a chained to see a contract through from sale to post installation support A can is provided with the job. Contact lan Campbell

Software Salesman

Experience in selling software, both standard packages, especially in the Interioris area and bospoke systems is required A car plus target earnings of c £16,000 — Contact for Campbell

Electronic Design, Principal Engineers and Engineers ~ c £6,000 - £8,000 (plus more for exponence) We need senior people to be involved in the logic design of numerous was need senior people to be involved in the logic design of numerous public hardware and visual display unit design and there will be numerous opportunities for evolusions into systems design. Formal qualifications in electronics are required and experience in mini's and micro's would be very useful Contact Martin Humphreys.

Design Draughtsman - £5,500 · £7,000 As part of our research and development group we have a number of vacancies involving a variety of work covering — printed circuit board layout — circuit drawing — electrome packaging — electromechanical drawing — when the mechanical drawing — when the mechanical drawing — when the mechanical drawing — electromechanical drawing — electr

Production Engineer (electro mechanical)£6,000 · £7,500. A senior man is required to laise between the design group and the production department covering such activities as general production engineering product value engineering electro mechanical design electro mechanical design electronic packaging design

electro mechanical design
electronic packaging design
Your qualifications and experience will be the deciding factor as
this is a responsible role requiring a range of abilities covering
good communications, dealing with people and sound technical

Repair Centre Supervisor - up to £7,500 plus car We need an experienced man besed at our Stevenage headquarters to oversee our lest and repair centre which needs consolidating and expanding. As a management function, this position needs a person with supervisory experience and at least live years operational practice. Please sand a curriculum vites in the first instance to Steve Adkins.

Field Engineers - c £5,500 plus a company car. In all of the following areas we need engineers with at least 2 years experience of servicing mins and peripherals — Hull. Birmingham, Sussox and North London. All the positions are home based. The minimum qualifications are City and Guilds (full tech) or five years proven experience. Send a curriculum vitae in the lirst instance to Stave Adkins.

D.P. Operator - up to £7,000

- esponsible and experienced person required for the generation customer system software. responsible for producing software to individual customer specifications
- Involves control of complex uses

  foreign control of complex uses

  Must be able to plan own work

  Job has considerable prospects of expansion for the right

  Contact Martin Humphreys nvolves control of complex data preparation

stated, you can receive further information on all the above positions

esa otherwise

(0438) 4381

DIGICO LIMITED Mens SG1 4PY



# datascene

CONTRACTS **PROGRAMMERS** 

SYSTEMS ANALYSTS

REGISTER NOW FOR IMMEDIATE AND FORTHCOMING REQUIREMENTS THROUGHOUT

> LONDON U.K. **EUROPE**

DUE TO OUR ESTABLISHED AND EXPANDING CLIENT BASE WE ARE ALWAYS INTERESTED IN TALKING TO COMPUTER PROFESSIONALS WITH A SOLID D.P. BACKGROUND OF AT LEAST 3-4 YEARS' EXPERIENCE.

TOP CONTRACTS ★ TOP RATES CALL BOB EDWARDS AT

Datascene International Ltd. 01-439 1856

## **Selling Business** Forms?

Here is an excellent opportunity to develop your sales career — with Avery

We need a mature salesman to handle our silf-adhesive business forms product range predominantly self-adhesive computer continuous stationery — through our established and successful Distributor Network in the North of England and Scotland. Experience in the development of distributor sales would be valuable; as would knowledge of pressure - sensitive products, but we provide full product training.

We offer a minimum earnings package of £7,000 including a good basic and commission on all sales, plus 1600 cc car. pension acheme, full life assurance, 4 weeks holiday (plus extra service holidays) etc.

If you are 25 to around 40 and live in Lancashire or Yorkshire, please write or telephone: Marion Creasey, Personnel Assistant, Avery Labels Systems, Ltd., Gardener Road, Maldenhead, Berkshire. Tel. (0628) 39911.



Avery Label Systems Ltd. An Avery International Company

#### COUNTY OF AVON Department of Personnel Services

MINI-COMPUTER PROGRAMMERS OR PROGRAMMER/ANALYSTS

ASSISTANT MANAGEMENT SERVICES
OFFICERS in the Management Services Division of the
Department which exists to assist departments of the
County Council in the exists to assist department of the ncil in the solution of managerial, orga

Salary Scale: AP3 £4080-£4533, AP4 £4644-£5067 or AP5 £5220-£5547 according to experience and qualifications. To tolar a term of the second pending.

To join a team of Management Services Officers engaged in the development of on-line mini-computer systems. The machine currently in use is a C.M.C. Reality Royale and the language used is BASIC. It is anticipated that successful candidates will develop the skills necessary to enable them to contribute to all stages of system development and implementation as practising Management Services.

Experience of programming mainframe and/or mini-computers, required. Appropriate qualification, particularly in a numerate or computer-related subject, an advantage. sistance with removal expenses in appropriate cases. ir informal discussion ring John Spry, Principal Managi ant Services Officer (Tel. Bristol 290777, Ext. 6308).

Further details and application form, returnable by 11th Fobruary, from Director of Personnel, Tel. Bristol 298565 Avon House, The Haymarket, Bristol B399 7DE.

Please must and market and market Base and a second and market Bristol B399 7DE. lease quote ref. no. PMS/MNS/6740

Recruiters Ltd

**CLASSIFIED COPY** 

All classified copy should reach our

offices no later than 3.30 p.m. on the Monday preceding Thursday's publication.

f complete artwork is supplied, 11 a.m. on a Tuesday.

Ring Ray Kelly for further details on 01-261 8016

**SMR** Sales & Marketing

**HAPPY NEW YEAR** SALESMEN

who secured new jobs, achieved enhanced status, and

our clients throughout the computer industry and assure them of our continuing support in their search for EXPERIENCED and TRAINEE SALES PEOPLE and PRE-POST-SALES PERSONNEL

For those clients who have yet to use our RECRUITMENT survices, or indeed our facilities for SALES TRAINING SALES AFTITUDE ASSESSMENT and MARKET RESEARCH we hope 1980 will be the year in which we do busines

Tel: 01-734 9776
Answering Service attor Grant
A Sales and Marketing Services Company

O

TRAINING, PROMOTION RESEARCH RECRUITMENT

\*

TRADER -- and the IFAM

\*\*\*\*\*\*\*\*\* **COMPUTER ENGINEERS** U.K. all systems go O.S.

> FIELD · SITE / SUPPORT ALL SYSTEMS GO £6,000-£18,000 BASIC P.A.

Stack Associates RECRUITMENT CONSULTANTS. HODDESDON (08924) 42729

\*\*\*\*\*\*\*\*

# **COMPUTER WEEKLY CLASSIFIED** 01 261 8028/8097/8019

the newspaper computer people rely on



Sales & Marketing Recruiters Ltd Victory House, 99 Regent Street, London W1R 7HB

# SENIOR SALES RECRUITMENT CONSULTANT **Central London**

The Sales and Marketing Services organisation provides a unique blend of services, primarily to suppliers throughout the computer industry. This includes:

> Recruitment (Sales and Sales Support Personnel) **Aptitude Analysis** Sales Training Market Research

We are seeking a senior sales recruitment consultant with the talent, energy and creativity to help us grow our already well established business, which is based in Regent Street, London

You may currently be employed as a recruitment consultant specialising in sales personnel. Alternatively, you may be a senior salesman or manager with extensive experience of the computer industry with a desire to move into recruitment and related marketing services.

We are able to offer high carnings potential and real scope for individuality within a relaxed, efficient and well informed company environment

TRADER

Please provide complete career details to Alan Williams quoting reference SMR/001

Tel: 01-734 9776 Answering service after 6.00pm or weekends 01-437 8228. TRAINING, PROMOTION, RESEARCH, RECRUITMENT

\*\*\*\*

Telephone can

pursuing overdue accounts. date" — like never!

first-time appointments.

The basic rule is simple. and so on.

I know there is such a whenever thing as tele-sales, but that numbers are engaged.

there might be to this thesis are best ignored.

The second most important rule is that all relevant other such telephonic "noinvestigating and planning go" areas. be completed before making the telephone call.

The validity of a company as a sales prospect should be established before the call is made by effective use of trade directories or whatever means of nontelephonic qualification are

ust also have been established before the event, and preferably the initial

interest and benefit. Rule three is to have a 'pianned presentation' which consists of an SBC range opening statement followed by key points which need to A POCKET guide to the Intel be covered. Brevity is the key word. Once the client

suited to "closing" the appointment, but the optional close" is usually the most effective.

two main diagonals, and finally switching the two centre columns. This gives

,	lb.	ွင္	11.99.41	13	
1	5	10	1	8	
		5 1 1 1 1 1 1			
			نهنتهن	-	
	4	. 15	14	.1.	

THE telephone is one of the . There is always a tempta-basic essential devices of tion-for the salesman to be the selling process. It is dif- drawn into supplying proficult to conceive how the duct information once the salesman could survive buyer has agreed to a without it, yet in many meeting. Don't do it! There circumstances it is the per- is no better way of talking fect tool for self-inflicted oneself out of the business. There is a considerable risk The areas where the of the potential buyer

telephone can be put to best saying "Now that I have a use are fairly obvious from better appreciation of your the collection of company product I'd prefer to leave data prior to first contact, to out meeting until a later However, there are some Rule four is to prepare a selling activities which formal list of all companies should completely exclude to be approached with the use of the telephone and complete basic information

one situation where it must such as correct name of the always be used with ex- best contact, town (journey treine sensitivity and com- planning, remember?) mon sense. It is this latter telephone number and area that I would like to deal dialling-code, product most with first the fixing of likely to create interest, most likely application area.

Use the telephone to sell the This not only creates a appointment, not to sell the -useful reference list but also assists speed and continuity

is relevant to fast moving Apart from prospecting, consumer goods and in the telephone is a dangemany cases represents rous and/or uscless device glorified order-taking. You in some key areas of busicannot successfully self ness. The ones that spring technically oriented pro- most readily to mind are ducts that require any kind. Sorting out problems, getexplanation, by ting decisions; providing explanations: delivering What few exceptions technical detail, establishing the truth; sup-

plying proof Tain sure you can think of

TRADER

A BROCHERE giving details of minis, microcomputers, and word processing systems has been produced by Data Proces-The correct name of the sing Accessories. The items right person to speak to deat with include furniture, must also have been estavariety of filing and storage units further details and a free contact made by a letter defining areas of common Mackintosh of DPA on Markow  $\pm (06284) 6363.$ 

aSBC range of single-board OEM computers and expansion has agreed to the appointment the call should be terthe most significant data and boards is available from Rapid minated.

It is up to the individual configuration planner, More details can be had from Norman techniques he believes to be suited to "closing" the Soho Mills. Woburn Industrial Park, Woburn Green, Bucks.

#### Security systems

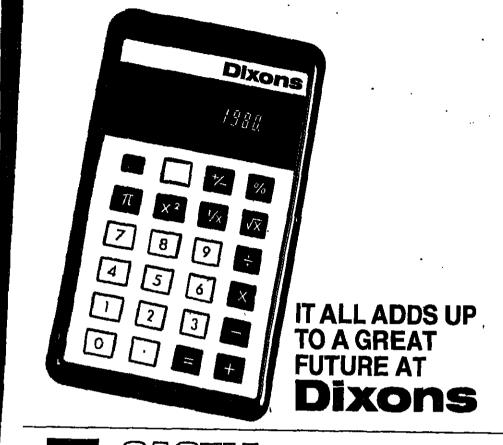
Codex highlights its Infor-guard datasecurity system Copies may be obtained from Dürer constructed his the company at 20 Cabat Square by writing the Boulevard. Mansield.

#### Light on Aladdin

A Light ET, outlining the chatacleristics of the computer sided design software system Aladoin hus been published by Ferranti Catec Graphics Aladdin — Automatic Logic Assignment, Device Disposition and laterconnection of Ness — was developed to assist electronic designers in the placement of components on printed or cuit boards and the organisation of the interconnecting tircuit pattism. Conjection 38488 Ferranti Catego Graphics Lid Ferry Road, Edinburgh Fills 2x5.



# ICL 2960 OPERATORS



- Salaries to £5,750 inc.
- Two shift working
- Stevenage location
- Benefits include relocation and big staff discounts

Dixons is the largest retail photographic and hi-fi company in Europe, and continued growth means first class career development opportunities for people who join now.

Computers play a big part in the company's growth plans. From a small NCR machine a lew years ago to a powerful ICL 2960 machine at present. Plans are already in hand to install new computers to deal with the new point-of-sale systems and to cope with the rapidly developing

As an operator, you would have an assured career path with a variety of work which only a growth company like Dixons can offer. Add to this the extra jeisure time which two shift working can bring and you will see that joining Dixons now could be a very smart move indeed.

Basic salaries are very high, there is a subsidised restaurant, big discounts on staff purchases and a range of other worthwhile benefits including help with relocation costs.

Dixons have a lot to offer and its all detailed in a paper which we will send to you. If you have solid operations experience on ICL machines and would like to find out more, call Mary

271 High Street, Berkhamsted, Herts. Phone: (04427) 73151

# GUIDE TO RECRUITMENT CONSULTANTS IN THE U.K

LONDON & H. COUNTIES (LH). MIDLANDS (M). NORTH (N). SCOTLAND (S). OVERSEAS (V)



£4000 - £7000+ Analysts & **Programmers** 081-832-4184 Sampson Staff

A PROFESSIONAL RECRUITMENT SERVICE TO CLIENTS AND CANDIDATES 11 CHARLOTTE SQUARE

COMPUTER INDUSTRY SPECIALISTS INSIGHT MARKETING & PERSONNEL CONSULTANTS LTD. AUSTIN HOUSE, CHARLOTTE STREET, MANCHESTER. TEL. 081-239 7028



GUADRANT

RECRUITMENT LIMITED

Philip Hockley, Bill Baker, Bank Huno, Queen St. Altonolium VVA14 20B St. Sinfueld \$1 (9). Tel. (06): 928 8302 F. Fel. (0742) 738794

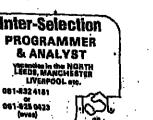


EDOIE BIGGAM OEREK KING 041-331 1938 031-226 2823 43 BATH 8T. 65 COCKBURN 8T 0LASGOW EDMBURGH



permanent and contract opportunities GEMINI Recruitment

PROGRAMMERS & ANALYSTS





Services Ltd Recruitment Consulting Division 52 Shaftesbury Avenue, London W1V 7DE 01 734 8662 (24 hour answering service) P.O. Box 63, Copthall Tower House, Harrogate HG1 1TS, Tel: Harrogate 66628 A CIGITS THAT ADD UP TO A GREAT JOB IN THE LIK DA O565 4925

COMPUTER INDUSTRY SPECIALISTS

INSIGHT MARKETING & PERSONNEL CONSULTANTS LTD. 2/16 Maryloboos (1gh St., Landon Will 4AJ) Telephoos 01-436 3641

# FOR FURTHER DETAILS OF THIS WEEKLY FEATURE

Contact: Owen Kelly, 061-872 4211 Basil McGowan, 021-346 4838 Ken Walford, 01-261-8019

# (CW prize crossword No1)

# THE FIRST WINNERS

THE winner of Computer Weekly's Prize Crossword No 1 is Mrs Shella Athey of Kineton, Warwick, and she receives the first prize of £10. Mrs Athey is a programmer at the headquarters of the Department of Transport's Midland Road Construction Unit at Leanington. The second correct solution out of the hat was submitted by Brian Fitzsimons of Hayes, Middleses, a systems programmer with Cannon Insurance, and the third was from Mrs Shella Figgett, data processing controller with Payroll Services of London. They will receive prizes of £5 each.

Prize Crossword No 2 will be published in Computer Weekly on February 7.

5	0	24	s	3 <u>+</u>	A	<b>1</b>		a P	A	A	Α		ш	δ.
<u></u>		R		A		A		0		_		1		E
	K	٥	C	×		<b>19</b> 2	ш	R	1	Μ	ш	۲	E	ď
A		٧		Ε		_		U		ш		ш		
°c.	L	Ē	Α	z	ш	Α	ú	5	۲		<sup>12</sup> ρ	ď	ø	Α
Ε		L		A				٩		<sup>13</sup>		A		цį
				20	4	<sup>15</sup> R	s	,	7	Ţ	\$	۴	E	ď
W.		17 C		Ā		ш		Z		>		ш		5
E	τ	٥	z	U	o	٤	٤	E	۾	ul				
Å		*		K		-				R		18/		2
红		F	Ę.		23 A	4	G	23k	Ε	5	ง	_	Q	2
\$		-		24 H		_		ш		١		Z		r
þ	A	z	T	A	اد	٥	٥	z		<sup>26</sup> 0	R	J.	6	_
0		E		L		اد		A		z		ш		R
P <sup>2</sup> —	ε	D	L	0	٥	S			v	5	۲	R	υ	۲

## shift leader **High Wycombe** £5,000 + p.a.

LEX TRANSPORTATION, part of the successful and diverse Lex Service Group, requires a Shift Leader for its twin UNIVAC 90/30 installation at High

Working on a conveniently timed rotating 3-shift basis, Monday – Friday, the Shift Leader will head up a small team dealing with on-line and batch operations. We therefore need a man or woman with Univacor other relevant experience.

We can offer a professional but informal environment, with interesting computer applications. In addition we have progressive salaries and conditions, including a non-contributory pension scheme Write or telephone: Phil Hoare,

Computer Manager, Lex Freight & Transport Computer Centre, Volvo House, Lancaster Road, High Wycombe, Bucks. High Wycombe (0484) 33444.

Lex Transportation

# COMPUTER WEEKLY CLASSIFIED

01 261 8028/8097/8019

the newspaper computer people rely on

SYSTEMS ANALYSTS This successful company offers excellent career opportunities for analysts with around 3 years experience to work on general commercial applications on IBM hardware utilising on-line or data-base techniques.

MERSEYSIDE

DATA PROCESSING MANAGER This major rotail company is about to open a new installation. They are seaking a candidate with good systems and programming experience and a nowledge of PDP hardware under RSTS-E, This is a true ground-floor opportunity.

LIVERPOOL SYSTEMS ANALYSTS

This major company is looking for two Systems Analysts with around 3 years IBM experience. The ideal applicants will have a minimum 1 year's programming in COBOL, ASSEMBLER or PL/1. On-line and Data-base a distinct advantage.

LIVERPOOL

Our client, an IBM installation, has a need for two programmers to work on on-line and data-base systems under DOS/VS, 2 years COBOL. ASSEMBLER and/or PL/1 essential

MERSEYSIDE **PROGRAMMERS** 

Our client is willing to negotiate a very attractive salary for top-notch COBOL programmers, 2 years general commercial applications experience a must. Knowledge of on-line and data-base systems especially under IDS and TDS would be extremely

MANCHESTER

SYSTEMS ANALYSTS

If you can combine 2 years analysis experience. together with some COBOL involvement, our client would be willing to offer a first rate benefits. package. A knowledge of stock or production control applications desirable but not essential,

BASIC + PROGRAMMER

A small and friendly installation are currently seaking a programmer with over 3 years experience, a part of which must have been on PDP hardware in a commercial environment. Salary and prospects

MANCHESTER

PRESTON

COBOL PROGRAMMERS PLAN/DRIVER PROGRAMMER

This company is undergoing a major expansion and will shortly install an ICL 2950. For the COBOL positions you should have gained good ICL experience preferably with on-line systems. In addition, the company are seeking a PLAN programmer with experience of DRIVER to undertake a communications technical support

SYSTEMS ANALYST

If you have around 2 years good analysis experience on any hardware in a fairly large environment, then our client can offer the latest IBM hardware and systems. Programming knowledge beneficial, Excellent prospects.

BURNLEY AREA **RPGII PROGRAMMER** 

programmer with ambition.

or applications viewpoint.

Our client is currently undertaking a number of on-line developments on IBM System 34 and are seeking a programmer with over 12 months experience, who wishes to join a small highly motivated team. Excellent opportunity for a young

ANALYST/PROGRAMMER

If you've had 2 - 3 years experience in an Analyst/ Programmer role with involvement of DEC Minis using DtBOL, this client offers involvement on a wide range of turnkey systems. Extremely interesting position with a progressive company.

PRESTON Neg. around £8500 PROJECT LEADER

Our chent, a major organisation, is planning a sophisticated network based on the latest maintraine and mini hardware. They therefore require a number of mature stall with in-depth experience of DISTRIBUTED PROCESSING from a technical

Phone STEVE SYKES or GORDON FORBES on LEEDS (0632) 444185 (daytime) or STEVE

for these and any other FADRTH WESTERN vacancies, or write with brief details (no stamp required) to Lorien Computer Services, FREEPOST,





Recruitment Consultants OCS House, Servia Road, Leeds LS7 1NJ Telephone 0532 444185

※(24 hour Telephone service)

#### RESEARCH **ASSISTANTS**

IN THE DEPARTMENT
OF COMPUTER SCIENCE
Applications are invited for research
assistentships for an SR C. supported project "The design continuation and evaluation of systems for
devanced applications" The project
involves production of software for
the MUS nework of computers currenstly under dovelopment. The succassful MUSS software will be dovelapped and transterred from MUB and
new software, particularly in the
database and applications areas, will
be provided. The successful candidates will work initially in the
compilier, database or operating system areas. Candidates should have a
record decide and reliables of an expentional property.

'em artes. Candidates should have a good deglas and relievant systems programming experience in research or industry. Posts swalls blo introdustry for 3 years. Insist salary (subject to revision) in the range (4,333:57.521 p.s. Applications with full cumpulum vites and names of two relarces should be sent to Dr. P. C. Capon, Department of Com-puter Science. The University, Manchester M 13 9PL (061-273 7) 21 Exts. 5026) by February 15th. 1880.

**★1900 AND 2960 OPS ★** 

We are currently looking for 1900 and 2960 operators for permanent vacancies in London and Middlesex. If you have a minimum of 18 months' experience on George 2, VME/8 or DME then we would like to hear from you. Shifts and salaries vary, up to direa £6000, plus some amezing fringe benefits. We also have several vacancies for trainee operators on most Start a new career in the new year, phone Geoff or John

on 01-381 5868 or 01-381 3330 or send rereer details to Select Operations Staff Limited, 352 North End Road, London S.W.6.

CONTRACT VACANCIES IN THE MIDLANDS AND SOUTH FREELANCE PROGRAMMERS & ANALYSTS

COMPETITIVE RATES INTERESTIND ASSIGNMENTS
REGISTER NOW WITH THE SPECIALISTS
PHONE 021-843 5118 (24 hours) to register or nord your c.v. 6 PROJECT RECRUITMENT LIMITED Fifth Figor, Scala House, Holloway Circuis Birmingham B1 12Q Licence No. M587

MOORE RESEARCH CENTRE Taliant opportunity to Join an organisation in the early stages of an expansion of activities in the electronics area. Moore-Paragon is a sittentional company. Its business forms production activity is the world's largest. Future USA assignment is a possibility in these positions. In now have openings in each of the following ereas:

MICROPROCESSOR SOFTWARE

ICROPROCESSOR HARDWARE



MS. J. HOOK MOORE BUSINESS FORMS LIMITED STATION APPROACH WALTHAM CROSS HERTPORDSHIPE **BOX Nos** 3ox∷number réplie

should be addressed t Box No.

c/o Computer Weekly Dorset House Stamford Street London SE1 9LU

### **Computer Services**

SENIOR OPERATOR

Reporting to our Production Controller you will supervise two or three stalf and be responsible for running our Computer Room and Work Control area on an hour by hour basis. 3203, 3410 and have a rapidly expanding TP network using 3278 terminals. The machine is operated under DOS/VS. POWER/VS, VSAM, CICS and SPMOL, although it is intended

to introduce DOS/VSE and DMS shortly. The machine itself will be replaced with a 4341 next year. If you have at least two years' experience in a similar configu-ration, including some supervisory experience, we would like to hear from you.

MEDIA LIBRARIAN HEFECW/276

£3,818-£4,211 p.s. inc. (award pending)

Due to Interbal promotion vel have a vecency for a Media biblishin: If you have six inonitie experience at a Media librarien, or in Computer Operations or Work Control we would be interested in hearing from you.

For further detalls on Both posts please phone Nigel Trott 937,5484 a.k. 575

The Royal Borough of KENSINGTON AND CHELSEA

Application forms cupiling appropriate difference number from the Research Service. The Town Hall: Hornton Street, WS 7NX: Tel: 01-937 8562 (24-hour enewering service): Closing deterior applications: 11th February 1986.

